

Evaluating the Effectiveness of the 2003–2004 NASA CONNECT[™] Program

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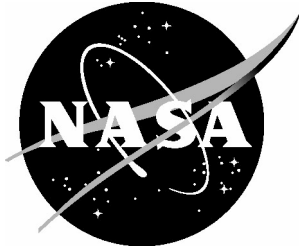
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Summary

NASA CONNECT™ <<http://connect.larc.nasa.gov>> is an Emmy®-award-winning series of instructional (distance learning) programs for grades 6–8 produced by the NASA Center for Distance Learning <<http://dlcenter.larc.nasa.gov>>. The nine programs in the 2003–2004 NASA CONNECT™ series are research-, inquiry-, standards-, teacher- and technology-based and include a 30-minute program, an educator guide containing a hands-on activity, and a web-based component. Each NASA CONNECT™ program (1) shows students the application of mathematics, science, and technology on the job; (2) presents mathematics, science, and technology as disciplines that require creativity, critical thinking, and problem-solving skills; (3) demonstrates the integration of workplace mathematics, science, and technology as a collaborative process; (4) raises student awareness about careers that require mathematics, science, and technology; (5) overcomes stereotyped beliefs by presenting women and minorities performing challenging engineering and science tasks; and (6) uses NASA research, facilities, and personnel to raise student awareness of careers and to exhibit the “real-world” application of mathematics, science, and technology. On April 15, 2004, 1,500 randomly selected NASA CONNECT™ registered users were invited to complete an electronic (self-reported) survey containing a series of questions, grouped in eight categories that, for the most part, employed a 5-point Likert-type scale response. This report contains the quantitative and qualitative results of that survey. In all, 263 participants returned surveys by May 15, 2004, the established cutoff date. Survey topics included (1) instructional technology and teaching; (2) instructional programming and technology in the classroom; (3) the NASA CONNECT™ program (television, educator guide, classroom activity, web-based activity, and web site); (4) the classroom environment; and (5) demographics. About 68 percent of the respondents were female, about 73 percent identified “teacher” as their present professional duty, about 88 percent worked in public schools, and about 56 percent held a master’s degree or master’s equivalency. Regarding NASA CONNECT™, respondents reported that the programs (1) enhance the teaching of mathematics, science, and technology ($\bar{x} = 4.53$); (2) are aligned with the national mathematics, science, and technology standards ($\bar{x} = 4.52$); (3) raise student awareness of careers requiring mathematics, science, and technology ($\bar{x} = 4.48$); (4) demonstrate the application of mathematics, science, and technology ($\bar{x} = 4.47$); and (5) present women and minorities performing challenging engineering and science tasks ($\bar{x} = 4.50$).

Introduction

The NASA Center for Distance Learning (CDL) is recognized for (1) its leadership in the application of traditional and emerging instructional technology; (2) the development of six exciting, innovative, inspirational, instructional, and educational programs that are an integral part of NASA’s Integrated Distance Learning Network; (3) its use of NASA programs, projects, facilities, and personnel to motivate and inspire teaching and learning; and (4) its ability to identify customer needs and to translate those needs into customer-focused programs. Originating as a collaboration with Christopher Newport University in 1996, the six programs offered by the NASA CDL “span the educational horizon” from grades K–12, through college (grades 13–18), to adult (lifelong) learners.

The Emmy®-award-winning programs produced by the NASA CDL are research-, inquiry-, standards-, and teacher-based. They are technology-focused programs that (1) promote creativity, critical thinking, and problem-solving skills; (2) integrate easily, in whole or in part, into an existing curriculum, and can introduce or reinforce a curriculum topic, objective, or skill; (3) serve both formal and informal education; (4) increase interest, engagement, and understanding of science, technology, engineering, and mathematics (STEM); (5) motivate and inspire students to pursue careers in STEM areas; (6) establish a connection between STEM concepts taught in the classroom and those used every day by NASA

researchers; (7) are readily accessible to homebound and homeschooled children; (8) increase (adult) scientific and technological literacy; (9) are closed- and (audio) descriptive-captioned, and are 508 compliant; (10) use technology to enhance and enrich the teaching and learning process; (11) advance the theory and practice of teaching mathematics, science, and technology; (12) support the NASA education strategy; (13) contribute to the nation's science and engineering goals; (14) support the Agency's workforce development initiatives; and (15) communicate the results of NASA discovery, exploration, innovation, and research.

NASA CONNECT™ draws from a growing body of research knowledge about the nature of learning; the principles of teaching and learning in general; and those principles that are specific to the teaching and learning of mathematics, science, and technology in grades 6–8. The philosophical foundation of the NASA CONNECT™ series rests on the idea that science, instead of being a collection of facts and premises, is a tool that can help process everyday experience (Knuth, Jones, and Baxendale, 1991). In addition, most middle school students require concrete representations to acquire new understanding (George, Lawrence, and Bushnell, 1998). To that end, the NASA CONNECT™ series engages students in a multi-layer exploration of real-world problem solving that incorporates mathematics, science, and technology. Rutherford (1990) asserts that to achieve scientific literacy, students must see connections between these disciplines. In each program, students are first introduced to a problem by watching the broadcast. The exploration of real-time situations increases student interest in science, enhances problem-solving skills, and boosts student achievement (Cawelti, 1999). Next, the students engage in hands-on activities that allow them to generate hypotheses and test them. Generating and testing hypotheses are powerful cognitive operations that result in an increased understanding of concepts (Marzano, Pickering, and Pollack, 2001). Lastly, NASA CONNECT™ includes a web-based simulation related to the problem under investigation. The National Center for Educational Statistics (2003) states that in grades 7 and 8, students whose teachers used computers for simulations scored higher in achievement than those who did not.

Overview of NASA CONNECT™

Officially released in 1997, NASA CONNECT™ is the oldest program produced by the NASA Center for Distance Learning. Each program in the series has the following three components: a 30-minute television broadcast, an educator guide that contains hands-on activities, and an interactive web activity that provides educators an opportunity to integrate technology into the classroom setting, thus enabling students to further explore topics presented in the broadcast. NASA CONNECT™ is a trademark owned by the National Aeronautics and Space Administration (NASA).

The American Institute of Aeronautics and Astronautics (AIAA) Foundation is the professional engineering society collaborator for NASA CONNECT™ and provides registered users with classroom mentors. The AIAA (with its predecessors) has been the principal society of the aerospace engineer and scientist for more than 70 years. With over 31,000 members, the AIAA is the world's largest association for the aerospace industry; its mission is to advance the arts, sciences, and technology of aeronautics and astronautics and to promote the professionalism of those engaged in these pursuits. Virginia Beach (VA) City Public Schools (VBCPS) is the NASA CONNECT™ education collaborator. VBCPS and other educators develop the classroom and web-based activities for each program.

The NASA CONNECT™ series has received numerous awards for program achievement, educational content, web site content and technical production. The 2003–2004 NASA CONNECT™ series received numerous awards for program achievement, educational content, and video production. These awards include a Regional Emmy® from the National Capital/Chesapeake Bay Chapter of NATAS in the category of writing awarded to the NASA CONNECT™ show *Virtual Earth*. The series or individual

programs in the series also received sundry awards of distinction and excellence in fields spanning the categories of creativity/videography to talent/on-camera, and web site graphics. Find a complete list of NASA CONNECT™ awards at <<http://connect.larc.nasa.gov/awards.html>>.

NASA is the copyright owner for all NASA CONNECT™ programs produced since March 2002. Although copyrighted, NASA grants to users (e.g., formal and informal educators) and television stations an unlimited, nonexclusive license to use, reproduce, and perform and display publicly the copyrighted works, with the proviso that users and television stations register with the NASA CDL. Users can register in one of four ways:

- (1) e-mail <dlcenter+mail@larc.nasa.gov>
- (2) on-line <<http://connect.larc.nasa.gov>>
- (3) telephone 757-864-6100
- (4) USPS: NASA CONNECT™
Office of Communications and Education
Mail Stop 400-DL
NASA Langley Research Center
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Users registering as educators must specify the number of students viewing each program, and television stations must specify the potential (viewing) audience. Educators are granted unlimited rights for duplication, dubbing, broadcasting, cable casting, and web casting when the NASA CONNECT™ materials are used for educational purposes. No fees or licensing agreements are required for registered users of programs in this series. Programs in the NASA CONNECT™ series may not be used, either in whole or in part, for commercial purposes without the express written permission (i.e., consent) of NASA.

As of September 30, 2004, 288,548 (formal and informal) educators, representing 8.78 million students and 468 television stations, with a combined (potential) audience of 156.9 million, were registered users of NASA CONNECT™. Programs in the NASA CONNECT™ series are up-linked (via satellite) in both KU- and C-band. Each program complies with the specifications found in the National Educational Telecommunications Association (NETA) *Common-Sense Guide to Technical Excellence*. Programs (1) also air nationally on Cable Access, ITV (instructional television), NASA TV, and Public Broadcasting System (PBS)-member stations; (2) can be streamed from the Apple Learning Interchange (ALI) <ali.apple.org> and South Carolina Educational Television (SC ETV) <www.knowitall.org>, and ibiblio at the University of North Carolina <nasa.ibiblio.org/connect.php>; (3) air on state-wide education television systems such as T-STAR and district wide educational television systems such as Virginia Beach Television (VBTV); (4) can be obtained from the NASA Education Resource Centers (ERCs) <www.nasa.gov>; and (5) can be purchased from NASA CORE (Central Operation of Resources for Educators) <<http://core.nasa.gov>>. There are nine programs in the 2003–2004 NASA CONNECT™ broadcast season; four were new programs and five were repeats of programs produced for the 2002–2003 broadcast season.

Evaluation

We use evaluation to obtain objective information that can help us determine the success of our distance learning programs and provide information for continuous improvement. For us, evaluation is an ongoing process that provides accurate and reliable information. We use evaluation (1) to approximate the cost/benefit of our programs; (2) as an accountability tool; (3) to help make sound decisions relating to program design, personnel, and budget; and (4) to determine whether our program objectives are met. We

use various tools to help us obtain objective data. In addition to the NASA Educational Evaluation Information System (NEEIS), we use (1) focus group interviews, (2) telephone surveys, (3) mail and electronic (self-reported) surveys, and (4) market research to collect qualitative and quantitative data from two groups: intermediaries (television station managers that represent stations airing NASA CONNECT™) and consumers (formal and informal educators) who are registered users of our programs.

In addition to direct program evaluation, we have developed a series of metrics to measure the success of our marketing efforts and the overall quality of our programs. Key metrics from the 2003–2004 season include monthly web site visitors (9,008), unique web site visitors (6,400), total educator guide downloads (25,876), total number of on-line activity visitors (7,333), number of registered users, number of registered stations, total number of video copies sold by NASA CORE (3,054), and PBS market coverage (39%). Web-based metrics are determined by using Web Trends®, an industry standard web statistics package. In addition to Web Trends®, we have access to web statistics for use of the interactive web activities we have developed using Squeak through AWStats. We had 3446 users (mostly students, teachers, or parents) install the free Squeak software and open one of the activities we developed. To determine metrics related to public television, we license and use an external database managed by PubTV™. By licensing from an outside source specializing in PBS data, we can ensure the validity of the information and access metrics such as air times that we could not develop in-house. We cull statistics that focus on registered users from our in-house registration database. In addition to providing a form of measurement, this database provides a way to directly contact individual users and allows us to conduct the telephone and mail surveys discussed previously. Overall, these metrics indicate both awareness and use of our programs by key market segments. The metrics, including an annual summary, are updated each month. Metrics are located on our web site at <<http://dlcenter.larc.nasa.gov/reports>> and can be accessed only from within the NASA Langley Research Center network.

Methodology

We randomly drew a sample of 1,500 registered users from the NASA CONNECT™ database, contacted them by email, and asked them to participate in the program evaluations of the 2003–2004 broadcast season. Each member in the sample group received a link to an electronic (self-reported) survey/questionnaire on April 15, 2004. The survey contained 92 questions, 10 of which dealt with demographics. Respondents had the option of requesting a free copy of the final assessment report, and all users who completed and submitted (electronically) a survey received a NASA educational compact disk (CD). We received 263 usable surveys by May 15, 2004, the established cutoff date. The overall response rate for the 2003–2004 NASA CONNECT™ evaluation project was 17.6 percent.

Organization of Report

The report begins with a summary followed by an introduction, overview, demographics, presentation of the qualitative and quantitative data, the interpretation of the data, concluding remarks (including recommended changes and/or topics and/or areas for further evaluation), and references. Appendix A contains a list of the programs, by title and description, in the NASA CONNECT™ 2003–2004 broadcast season, appendix B is the on-line survey, and appendix C contains the qualitative data. The qualitative data come from the evaluation questions that allowed respondents to offer “other” as a response and/or to qualify their responses. We also incorporated the qualitative data we collected into the suggested changes for the 2004–2005 NASA CONNECT™ season. This report is available on the Langley Technical Reports Server (LTRS), <<http://techreports.larc.nasa.gov/ltrs/ltrs.html>>.

Demographics

We asked survey participants a series of demographic questions, the answers to which enabled us to establish the following respondent profile (findings) for the 2003–2004 NASA CONNECT™ survey:

- 171 of 251 respondents were female.
- 113 respondents were in suburban school districts, 73 in rural school districts, and 64 in urban school districts.
- 194 respondents were “classroom teachers.”
- 223 of 252 respondents worked in a public school.
- 141 of the respondents held a master’s degree or master’s equivalency.
- 195 of 251 respondents identified themselves as Caucasian.
- Of 255 respondents, 100 were in their forties and 80 were in their fifties.
- The mean and median “years as a professional educator” were 13.64 and 12, respectively.
- 241 of 250 respondents owned a personal computer.
- 167 of 252 respondents were members of a professional (national) mathematics or science educational organization.

Presentation of Quantitative Data

The survey questions pertain to nine topics. We asked respondents to react to questions about instructional technology and programming in the classroom and to items specifically related to the NASA CONNECT™ program series. Findings for the remaining eight topics are presented in this section. The topic results are reported in terms of mean ratings when the survey items involved a 5-point Likert scale and in percentages when the questions required other responses. The statistical values for responses to each 5-point Likert scale question were calculated by using the number of respondents (n) that answered that particular question rather than the number from the total population of respondents (N).

Topic 1. Instructional Technology and Teaching

Respondents were asked to rate six statements about instructional technology and teaching (table 1). Respondents gave the highest mean rating ($\bar{x} = 4.56$) to the statement, “instructional technology increases student motivation and enthusiasm for learning.” The next highest mean ratings were given to these statements: “technology enables teachers to teach more effectively” ($\bar{x} = 4.46$), “technology enables teachers to accommodate different learning styles” ($\bar{x} = 4.45$), and “technology helps teachers to be more creative” ($\bar{x} = 4.43$). The lowest mean ratings went to these statements: “instructional technology increases student learning and comprehension” ($\bar{x} = 4.28$) and “in general, the instructional programs I have seen are of good quality” ($\bar{x} = 3.97$).

Table 1. Instructional Technology (In General) and Teaching

Question	Mean	Median	Standard deviation	Min.	Max.	Number of responses (n)
In general, instructional technology helps teachers to teach more effectively.	4.46	5	0.86	1	5	257
Instructional technology helps teachers accommodate different learning styles.	4.45	5	0.87	1	5	257
Instructional technology helps teachers be more creative.	4.43	5	0.88	1	5	256
Instructional technology improves student learning comprehension.	4.28	4	0.91	1	5	249
Instructional technology increases student motivation and enthusiasm for learning.	4.56	5	0.83	1	5	254
In general, the instructional programs I've seen are of good quality.	3.97	4	0.97	1	5	255

Min. denotes minimum rating reported.

Max. denotes maximum rating reported.

Instructional Technology

Respondents completing the survey reacted to three statements concerning the actual use of instructional technology in the classroom (table 2). Respondents gave the highest mean rating ($\bar{x} = 4.07$) to the statements “administrators support and encourage teachers to use instructional technology in the classroom” and “the technology training my school division provides has improved my computer skills” ($\bar{x} = 3.78$). The statement “teachers are generally positive about introducing/using instructional technology in the classroom” ($\bar{x} = 3.28$) received the lowest rating.

Table 2. Instructional Technology

Question	Mean	Median	Standard deviation	Min.	Max.	Number of responses (n)
In my experience, administrators support and encourage teachers to use instructional technology in the classroom.	4.07	4	1.14	1	5	255
The technology training provided by my school division has improved my computer skills.	3.78	4	1.52	1	5	255
Teachers are generally eager to use instructional technology in the classroom.	3.28	3	0.97	1	5	256

Min. denotes minimum rating reported.

Max. denotes maximum rating reported.

Respondents also received a list of factors that could prohibit or limit the integration of technology into their instructional programs. We asked them to indicate which of these factors they considered barriers to integrating technology into the instructional program (fig. 1). Respondents were not limited to selecting one factor; they could select all factors that applied. They indicated that limited access to computers was the greatest barrier (148 respondents), followed by lack of time in the school schedule for technology projects (133 respondents), and lack of software (106 respondents). Lack of technical support was the next most frequent barrier (85 respondents), while others indicated that there were no barriers to integrating technology into their instructional programs (37 respondents).

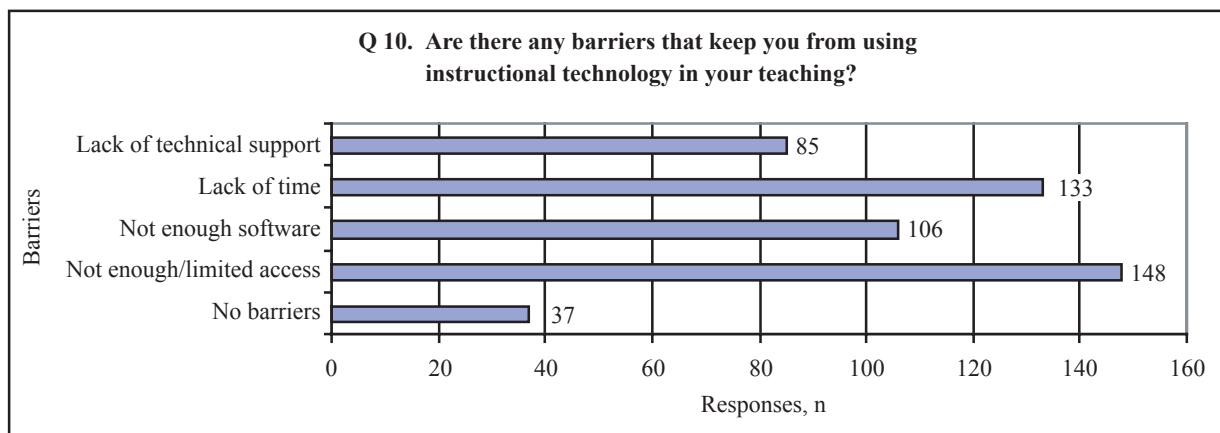


Figure 1. Barriers to integrating technology.

Topic 2. Assessment of NASA CONNECT™

Instructional Programming

Respondents were asked to react to two general statements about instructional technology programming intended for use in the classroom (figs. 2 and 3). Eighty-eight percent of respondents indicated that the overall quality of NASA CONNECT™ was “better than average” and 81 percent indicated that the video quality in the NASA CONNECT™ programs was “better than average.”

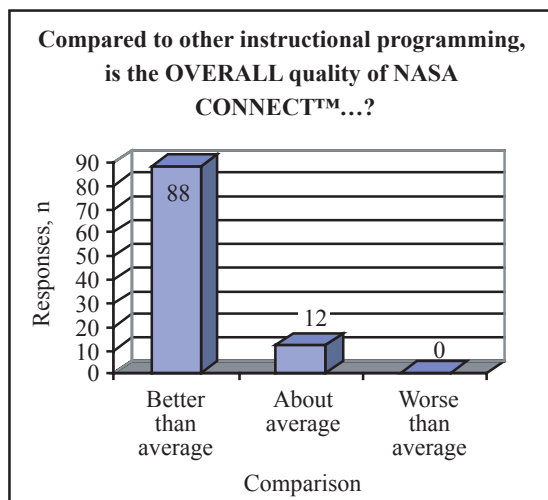


Figure 2. Overall quality of NASA CONNECT™ compared to other instructional programming.

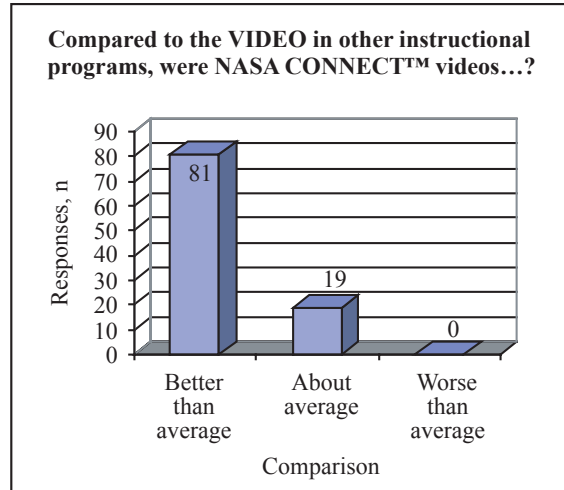


Figure 3. Overall video quality of NASA CONNECT™ compared to other instructional programming.

Respondents were asked to provide an overall assessment of the nine programs in the 2003–2004 NASA CONNECT™ series (table 3). The highest mean ratings went to the statements “the NASA CONNECT™ program content enhanced the integration of mathematics, science, and technology” ($\bar{x} = 4.53$) and “the programs were aligned with national mathematics, science, and technology standards” ($\bar{x} = 4.52$). Respondents gave the lowest ratings to these statements: “the programs presented females and minorities performing challenging engineering and scientific tasks” ($\bar{x} = 4.42$) and “the program content was easily integrated into the curriculum” ($\bar{x} = 4.28$).

Table 3. Overall Assessment of NASA CONNECT™ Program

Question	Mean	Median	Standard deviation	Min.	Max.	Number of responses (n)
The programs were easily incorporated into the curriculum.	4.28	4	0.84	1	5	96
The programs enhanced the integration of mathematics, science, and technology.	4.53	5	0.71	1	5	95
The programs raised student awareness of careers that require mathematics, science, and technology.	4.48	5	0.77	1	5	93
The programs demonstrated the application of mathematics, science, and technology on the job.	4.47	5	0.73	1	5	95
The programs were aligned with national mathematics, science, and technology standards.	4.52	5	0.77	1	5	89
The programs presented females and minorities performing challenging engineering and scientific tasks.	4.42	5	0.86	1	5	95

Min. denotes minimum rating reported.

Max. denotes maximum rating reported.

Topic 3. NASA CONNECT™ Television/Video Programs

We asked respondents if they used the nine programs at the time they were received (fig. 4). The number of “yes” responses varied from 54 respondents (55 percent) for Program 2 to 22 respondents (23 percent) for Program 5. The number of “no” responses varied from 34 respondents for Program 9 (37 percent), to 14 (14 percent) for Program 2. Overall, the number of respondents that indicated they had not used the programs but “may in the future” ranged from 42 (45 percent) for Program 9 to 30 (31 percent) for Program 1.

Respondents who used the NASA CONNECT™ programs identified how they used them (table 4). Respondents could choose from four possible uses of the NASA CONNECT™ programs: (1) to introduce a curriculum topic, objective, or skill; (2) to reinforce a curriculum topic, objective, or skill; (3) as a special interest topic; or (4) for some other purpose. The highest number of respondents indicated that they used the programs to reinforce a curriculum topic, objective, or skill (92 respondents). The least common reported use of NASA CONNECT™ programs was as a break from classroom routine (54 respondents).

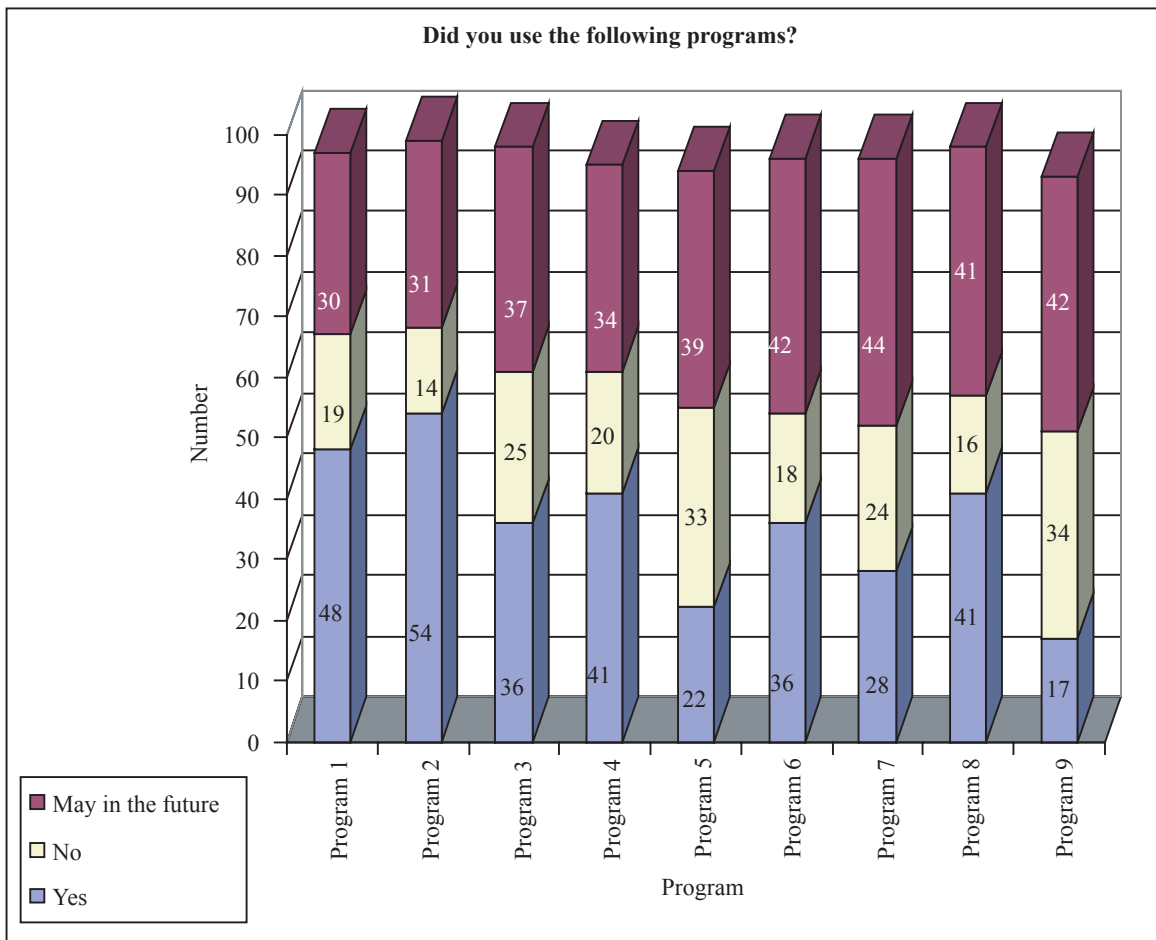


Figure 4. Use of NASA CONNECT™ television/video programs.

Table 4. How NASA CONNECT™ Programs Are Used in Classroom

Question: NASA CONNECT™ was used . . .	Yes	No
to introduce a curriculum topic, objective, or skill	68	31
to reinforce a curriculum topic, objective, or skill	92	7
as a special interest topic	77	22
as a break from classroom routine	54	45

Program Delivery

Respondents who used the programs were asked to indicate the method by which they received the program (table 5). Five options for program receipt were given: (1) PBS, (2) downlinked it, (3) Media Specialist taped it, (4) I or someone else taped it, or (5) via NASA's Educator Resource Center (ERC). A total of 100 individuals responded to this question. The most common method of receipt reported was "PBS/ITV" (23 respondents), followed by "I or someone else taped it," "Downlinked it," and "NASA's ERC" (21 respondents each). The least common method of receipt was to have a media specialist tape the programs (14 respondents). A follow-up question regarding receipt of the NASA CONNECT™ program inquired whether the respondent experienced any difficulty obtaining any of the programs in the 2003–2004 series. Of the 98 respondents, 38 percent indicated experiencing difficulty obtaining the programs, a 10 percent decrease from last year's data.

Table 5. How Programs Were Received

Question: How did you receive the programs?	Number of responses (n)
PBS/ITV	23
Downlinked it	21
Media Specialist taped it	14
I or someone else taped it	21
NASA's ERC	21

Grades Viewing the NASA CONNECT™ Programs

Respondents who used the 2003–2004 NASA CONNECT™ reported which grade levels viewed the programs (fig. 5). Seventh graders (16 percent) had the largest percentage of students viewing the 2003–2004 NASA CONNECT™ series, followed by sixth and eighth graders (15 percent). The least common grade levels to view the 2003–2004 NASA CONNECT™ programs were grades 13, 15, and 16, comprising less than 1 percent of the total viewing audience. One should assume that postgraduate grade levels were likely viewing the programs in a training capacity. The grade levels viewing the shows are predominantly aligned with the target audience of the NASA CONNECT™ series.

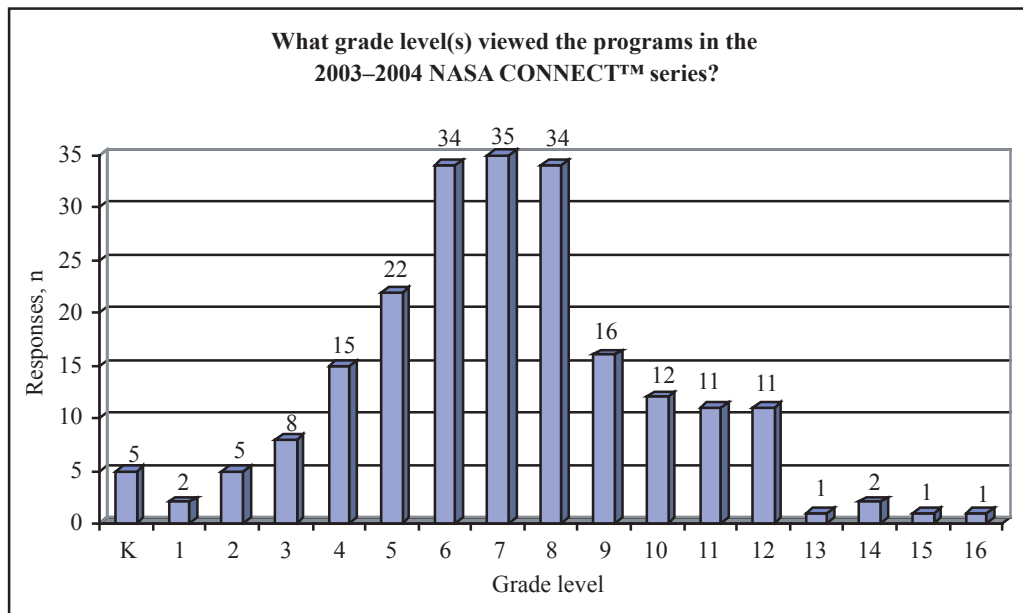


Figure 5. Grade levels viewing the programs.

Program Quality

Table 6 presents respondents' ratings about the quality of the NASA CONNECT™ television/video programs. The highest mean rating (4.59) went to the statement “programs made learning science and math interesting.” The statements “programs were of good technical quality” and “programs were a valuable instructional aid” received ratings of 4.54. To the statement “the programs were of good artistic quality” the mean result was 4.49. Respondents gave the lowest rating (4.33) to the statement “the programs were appropriate for the specified grade level.”

Table 6. Quality of NASA CONNECT™ Television/Video Programs

Question	Mean	Median	Standard deviation	Min.	Max.	Number of responses (n)
The programs were of good artistic quality.	4.49	5	0.72	1	5	94
The programs were of good technical quality.	4.54	5	0.66	1	5	97
The programs helped me accommodate different learning styles.	4.44	5	0.75	1	5	96
The programs were well organized.	4.42	5	0.72	1	5	96
The programs made learning science and math interesting.	4.59	5	0.63	1	5	97
The programs increased my students' knowledge of science and math.	4.47	5	0.70	1	5	96
The programs were a valuable instructional aid.	4.54	5	0.75	1	5	95
The programs were appropriate for the specified grade level.	4.33	4	0.77	1	5	93
The programs increased student motivation and enthusiasm for learning.	4.45	5	0.75	1	5	95

Min. denotes minimum rating reported.

Max. denotes maximum rating reported.

Program Length

We asked respondents their opinions regarding the length of the video programs in the 2003–2004 NASA CONNECT™ series (fig. 6). The overwhelming majority indicated that the length of the programs was “just right” (89 respondents).

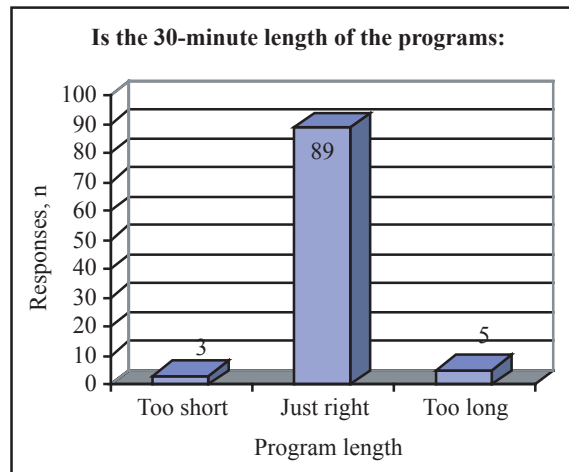


Figure 6. Program length.

Topic 4. NASA CONNECT™ Educator Guides

Use of Educator Guides

Respondents were asked if they used the educator guides they downloaded as part of their registration with the NASA CONNECT™ series (fig. 7). Eighty six respondents indicated that they did use the educator guides, while 81 respondents did not. Another 96 respondents indicated that they may use the educator guides in the future.

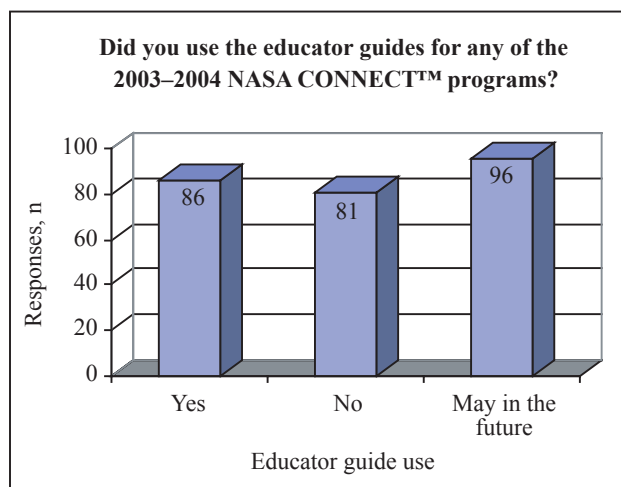


Figure 7. Use of the NASA CONNECT™ educator guides.

Quality of Educator Guides

Surveyors asked respondents to react to seven statements about the quality of the NASA CONNECT™ educator guides (table 7). The statement that “print and electronic resources in the educator guides were valuable to me” received the highest mean rating ($\bar{x} = 4.48$). The next highest level of agreement was “the educator guides were a valuable instructional aid” ($\bar{x} = 4.38$). The next highest scores were given to these statements: “the teacher background portion was valuable to me,” ($\bar{x} = 4.37$), and “the layout of the educator guides presented the information clearly” ($\bar{x} = 4.34$). The statements, “the directions/instructions in the educator guides were easy to understand” ($\bar{x} = 4.25$) and “the educator guides were easy to download from the Internet” ($\bar{x} = 4.15$) received the lowest mean ratings.

Table 7. Quality of NASA CONNECT™ Educator Guides

Question	Mean	Median	Standard deviation	Min.	Max.	Number of responses (n)
The educator guides were a valuable instructional aid.	4.38	5	0.81	1	5	85
The educator guides were easy to download from the Internet.	4.15	4	1.04	1	5	81
The educator guides correlated well with the video.	4.33	5	0.92	1	5	69
The directions/instructions in the educator guides were easy to understand.	4.25	4	0.93	1	5	84
The layout of the educator guides presented the information clearly.	4.34	4	0.83	1	5	82
The print and electronic resources in the educator guides were valuable to me.	4.48	5	0.76	1	5	81
In the educator guides, the teacher “background” portion was valuable to me.	4.37	5	0.85	1	5	83

Min. denotes minimum rating reported.

Max. denotes maximum rating reported.

Topic 5. NASA CONNECT™ Classroom Activities/Experiments

Use of Classroom Activities/Experiments

Respondents were asked if they used the classroom activities/experiments included with the 2003–2004 NASA CONNECT™ series (fig. 8). Fifty respondents used the activities, while 75 did not. Another 138 respondents indicated that they may use the activities/experiments in the future.

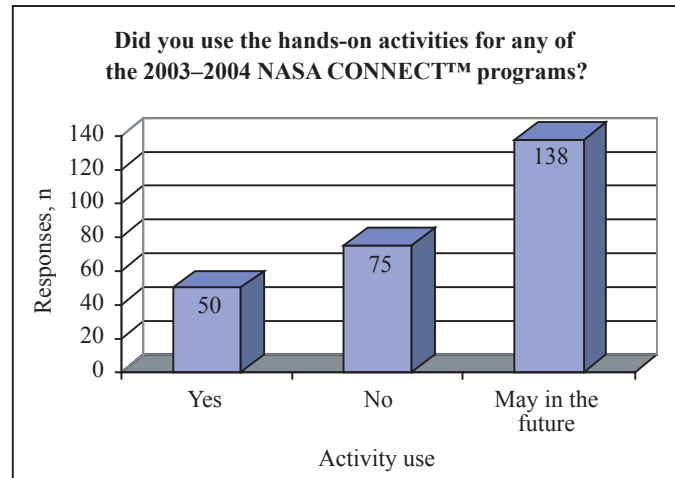


Figure 8. Use of NASA CONNECT™ classroom activities and experiments.

Quality of Hands-On Activities/Experiments

Survey participants responded to four statements about the program-related, hands-on activities/experiments (table 8). The quality of the hands-on activities/experiments was rated highest for complementing the lesson for each show ($\bar{x} = 4.45$). The hands-on activities and experiments also had high ratings for being appropriate for the grade level ($\bar{x} = 4.36$) and the ease of incorporating them into the lesson plans ($\bar{x} = 4.19$). The lowest mean rating went to the statement concerning ease of use ($\bar{x} = 4.06$).

Table 8. Quality of NASA CONNECT™ Hands-On Activities and Experiments

Question	Mean	Median	Standard deviation	Min.	Max.	Number of responses (n)
The activities/experiments were easily incorporated into my lesson plan.	4.19	4	0.84	1	5	50
The activities/experiments complemented the lesson for each show.	4.45	5	0.81	1	5	46
The activities/experiments were appropriate for the specified grade level.	4.36	4.5	0.80	1	5	50
The activities/experiments were easy for me to use.	4.06	4	0.91	1	5	50

Min. denotes minimum rating reported.

Max. denotes maximum rating reported.

Topic 6. NASA CONNECT™ On-Line Activities

Use of On-Line Activities

Respondents were queried regarding their use of the on-line (also referred to as web-based) activities provided in conjunction with the 2003–2004 NASA CONNECT™ series. Seventy-eight respondents indicated that they had indeed used the on-line activities, while another 103 respondents indicated that they may use these activities in the future. Eighty-two respondents indicated that they had not used the on-line activities (fig. 9).

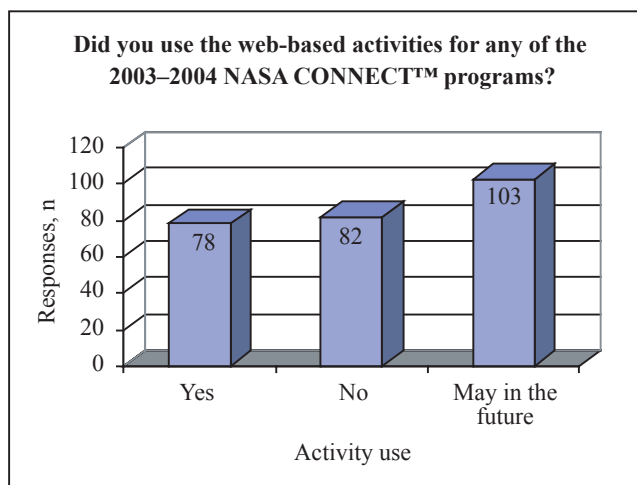


Figure 9. Respondents using NASA CONNECT™ on-line activities.

When asked to give a comparative opinion regarding the on-line activities in NASA CONNECT™ as compared to other on-line activities, respondents indicated overwhelmingly that the ones found coupled with the NASA CONNECT™ series were “average” (21 respondents) or “better than average” (57 respondents). No respondents indicated that the activities were worse than average (fig. 10).

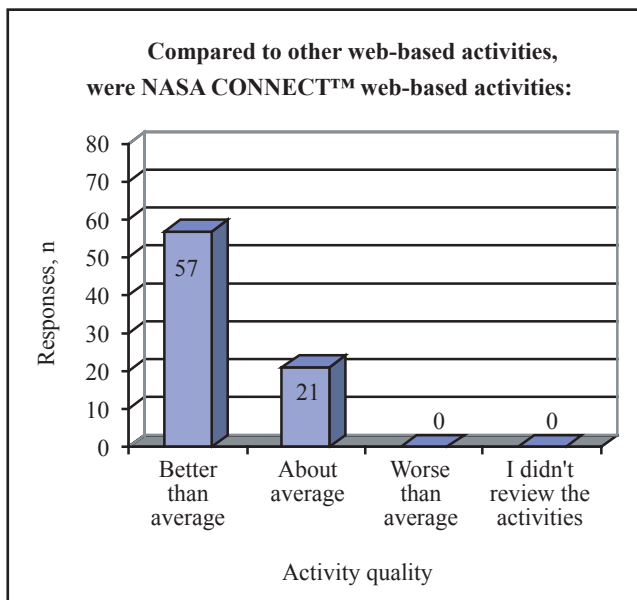


Figure 10. Quality of the NASA CONNECT™ on-line activities.

Quality of On-Line Activities

The respondents reacted to 12 statements concerning the quality of the NASA CONNECT™ programs' on-line activities (table 9). The statements that “the on-line activities enhanced the integration of mathematics, science, and technology” ($\bar{x} = 4.30$) and that “the on-line activities raised student awareness of careers that require mathematical, technological, and scientific knowledge” ($\bar{x} = 4.24$) received the highest mean ratings from the respondents. A slightly lower rating was given to the statement that “on-line activities accommodated various learning styles” ($\bar{x} = 4.21$). The statement, “students were able to complete the on-line activities in a reasonable amount of time” ($\bar{x} = 3.97$) received the lowest mean ratings for this section, although this finding showed a marked improvement over the previous year's mean rating of ($\bar{x} = 3.82$).

Table 9. Quality of NASA CONNECT™ On-Line Activities

Question	Mean	Median	Standard deviation	Min.	Max.	Number of responses (n)
The on-line activities were easily integrated into the curriculum.	4.13	4	1.01	1	5	76
The on-line activities raised student awareness of careers that require mathematical, technological, and scientific knowledge.	4.24	4	0.92	1	5	75
Students were able to complete the on-line activities in a reasonable amount of time.	3.97	4	0.94	1	5	74
The on-line activities accommodated various learning styles.	4.21	4	1.02	1	5	75
The content for the on-line activities was appropriate for my students.	4.13	4	1.04	1	5	76
The on-line activities enhanced the integration of mathematics, science, and technology.	4.30	5	1.11	1	5	76

Min. denotes minimum rating reported.

Max. denotes maximum rating reported.

Topic 7. NASA CONNECT™ Web Site

Use of NASA CONNECT™ Web Site

Surveyors also asked respondents if they had viewed the NASA CONNECT™ web site (fig. 11). A total of 201 respondents indicated that they had viewed the site, while only 62 respondents indicated that they had *not* viewed the NASA CONNECT™ web site.

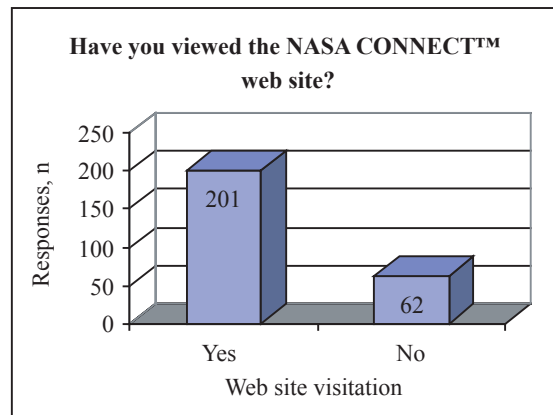


Figure 11. Respondents viewing the NASA CONNECT™ web site.

Quality of NASA CONNECT™ Web Site

Those surveyed were asked to respond to three statements about the NASA CONNECT™ web site (table 10). They gave the highest mean ratings to the statements, “the links to other sites/pages are current” ($\bar{x} = 4.38$) and “the NASA CONNECT™ web site is visually appealing” ($\bar{x} = 4.37$). Respondents gave the lowest rating to “the NASA CONNECT™ web site is easy to navigate” ($\bar{x} = 4.20$).

Table 10. Quality of NASA CONNECT™ Web Site

Question	Mean	Median	Standard deviation	Min.	Max.	Number of responses (n)
The NASA CONNECT™ web site is visually appealing.	4.37	5	0.81	1	5	202
The NASA CONNECT™ web site is easy to navigate.	4.20	4	0.87	1	5	199
The links to other sites/pages are current/up to date.	4.38	5	0.92	1	5	196

Min. denotes the minimum rating reported.

Max. denotes the maximum rating reported.

Topic 8. Overall Assessment

Respondents replied to three questions regarding their satisfaction and their impressions of NASA CONNECT™ programs during the 2003–2004 season (figs. 12–14). Through their reply, 99.6 percent of respondents indicated that they would recommend the NASA CONNECT™ series to a friend, and 93 percent answered that NASA had been successful in educating and informing others about what NASA does. Another 88 percent indicated that the information provided in the NASA CONNECT™ programs was “very credible,” while 4 percent indicated that the information provided was “somewhat credible.” All other respondents indicated that they were “unable to judge” (8 percent).

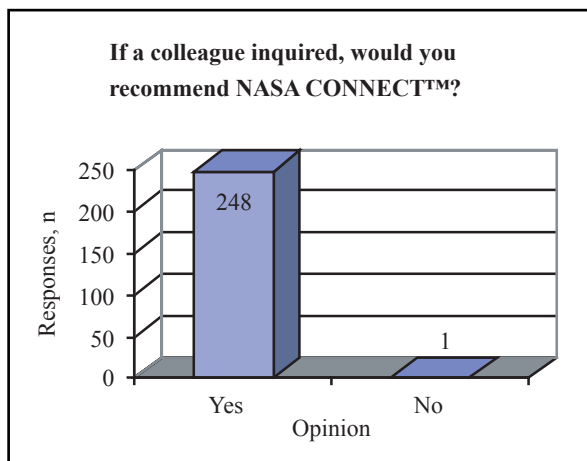


Figure 12. Respondents recommending the NASA CONNECT™ series.

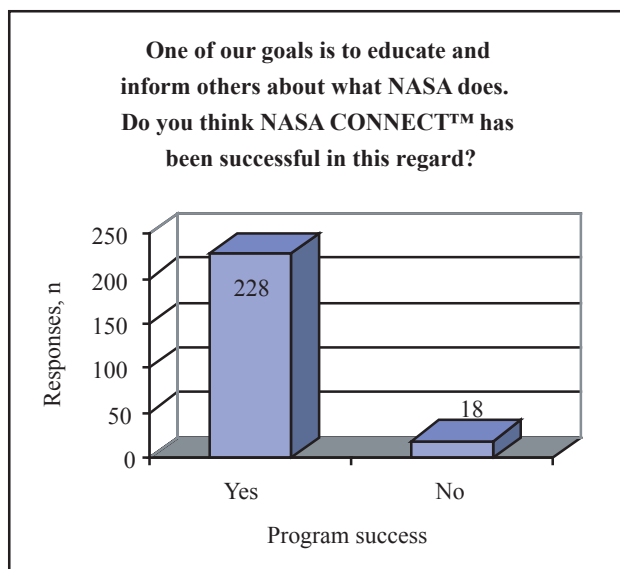


Figure 13. Respondents' impressions regarding NASA's statement of goals.

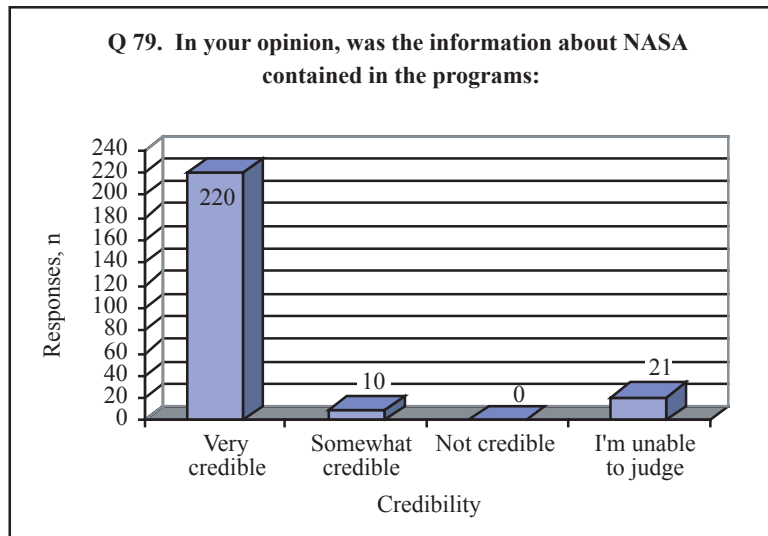


Figure 14. Respondents' opinions regarding NASA CONNECT™ program content.

Topic 9. Videoconferencing

We polled respondents on their ability and receptiveness to using videoconferencing technologies and the ways in which they would most likely wish to implement these technologies (figs. 15–17). Respondents overwhelmingly indicated that they did not have access to videoconferencing equipment (78 percent), and that they would not be interested in having students participate in NASA-sponsored videoconferences (78 percent). Those who indicated an interest and/or ability in videoconferencing requested a relatively diverse supply of information across linguistic boundaries, with 48 respondents naming a preference for videoconferencing in English, 9 respondents preferring Spanish, and another 7 respondents preferring videoconferences in both English and Spanish.

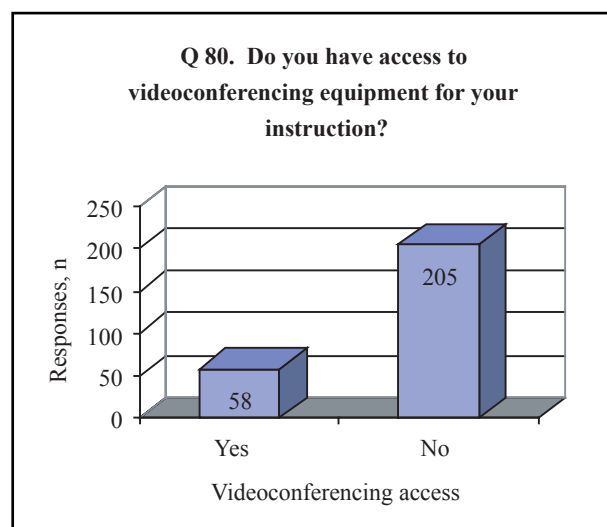


Figure 15. Respondents reporting access to videoconferencing equipment.

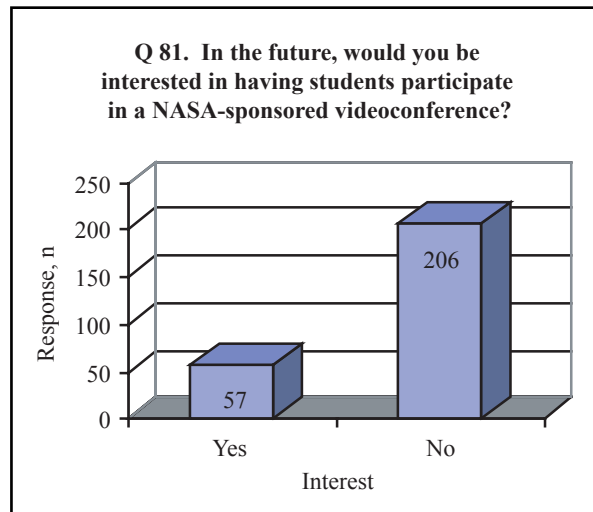


Figure 16. Respondents' interest in videoconferencing-based instruction.

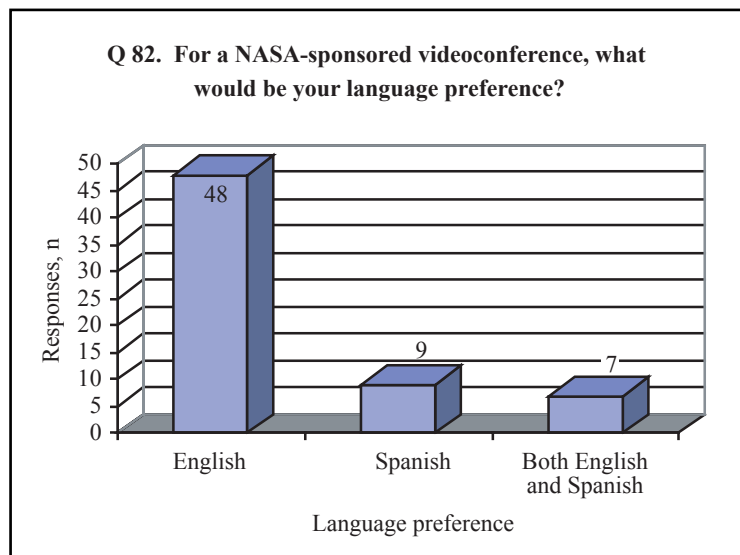


Figure 17. Respondents' language preference for videoconferencing.

Presentation of Qualitative Data

The qualitative data come from the evaluation questions, which allowed respondents to offer “other” as a response and/or to qualify their responses. Respondents gave nearly 100 qualitative responses to the 2003–2004 NASA CONNECT™ evaluation survey (appendix C). Most of these comments were “positive”, with commendatory references to the NASA CONNECT™ program series.

1. Several respondents reported using only one or more program components. Lack of “available classroom time” was frequently cited as the reason for this lack of full-scale implementation. Other problems encountered included difficulty “downloading the educator guides” or receiving timely notice of broadcast dates.
2. Of those respondents who indicated they had difficulty acquiring/obtaining the programs, lack of broadcast by a local PBS station was most commonly cited as a problem. Other respondents indicated difficulties in dealing with NASA’s ERCs.
3. There are certain technical difficulties that we can attribute to the consumer’s side of broadcast/delivery. Some respondents indicated that they preferred receiving the videos and print resources directly from NASA’s CDL.
4. Some respondents indicated a desire for enhanced support regarding the programs and supplemental materials. These requests ranged from possible “teacher workshops” to the creation of a “resource person” position to help answer questions when they arise.

Interpreting the Findings

Having presented the survey data in the previous section, the next step involves interpreting the data in terms of assessing the quality of NASA CONNECT™. Excluding the survey demographics, interpretations of the findings are presented by topic. Note that some of the survey wordings changed slightly from previous years and that the changes are indicated below the tables. Between the 2001–2002 and 2002–2003 seasons, the extremes of the 5-point Likert scale went from disagree/agree to strongly disagree/strongly agree. Because of these changes, we cannot make rigorous statistical comparisons, but it is still valuable to look at previous years’ data for comparison.

Topic 1. Instructional Technology and Teaching

We present a comparison to previous years’ data in table 11. Survey respondents continue to take the position that instructional technology enables teachers to teach more effectively, to accommodate different learning styles, and to be more creative. The respondents continue to believe that instructional technology increases student learning, comprehension, motivation, and enthusiasm for learning. The weakest rating ($\bar{x} = 3.97$ for this year) was for the quality of instructional programs. The 2003–2004 NASA CONNECT™ survey respondents provided numerical data leading to overall mean values which are higher, in some cases significantly, than last year. Overall, we interpret these findings to mean that survey respondents continue to believe in the power of instructional technology to enhance and enrich the learning process and experience. That belief coincides with the relevant literature and research and would seem to support the large-scale effort on the part of educators to improve school access to educational technology.

Table 11. Instructional Technology and Teaching Comparison Means

Question	2000–2001	2001–2002	2002–2003	2003–2004	Average
Instructional technology helps* teachers teach more effectively.	4.44	4.58	4.18	4.46	4.42
Instructional technology helps* teachers accommodate different learning styles.	4.58	4.47	4.17	4.45	4.42
Instructional technology helps* teachers to be more creative.	4.61	4.50	4.27	4.43	4.45
Instructional technology improves student learning comprehension.**	4.30	4.37	4.07	4.28	4.26
Instructional technology increases student motivation and enthusiasm for learning.	4.45	4.48	4.27	4.56	4.44
In general, the instructional programs I've seen are of good quality.***	3.94	3.53	3.71	3.97	3.79
Average (\bar{x})	4.39	4.32	4.11	4.36	

* The previous year's surveys used the word "enables" instead of "helps."

** The previous year's wording was "increases student learning and comprehension."

***The previous year's wording was "Most of these programs are of good quality."

Survey respondents reported that administrators generally support and encourage the use of instructional technology in the classroom ($\bar{x} = 4.07$), even to a higher degree than last year (see table 12). However, teachers aren't as eager to use instructional technology in their classrooms ($\bar{x} = 3.28$), even to a lesser degree than last year. We can see this difference in the previous years' data. For the last five years, respondents selected "no or limited access to computers" and "lack of time in the school schedule for technology projects" as the two greatest barriers to integrating instructional technology in the classroom. Research suggests an increasing amount of pressure on administrators, teachers, and students to pass standardized "competency" tests. Conventional wisdom indicates that administrators and educators alike are reluctant to allow or to introduce any instructional resource into the classroom that does not clearly support the state standards. The combination of these factors may help explain the differences between a teacher's high opinion of the value of instructional technology and their eagerness to use technology in the classroom.

Table 12. Instructional Technology Comparison Means

Question	2000–2001	2001–2002	2002–2003	2003–2004	Average
In my experience, administrators support and encourage teachers to use instructional technology in the classroom.*	4.07	3.82	3.72	4.07	3.92
The technology training my school division provides has improved my computer skills.	NA	NA	NA	3.78	NA
Teachers are generally eager to use instructional technology in the classroom.**	3.46	3.32	3.45	3.28	3.38
Average (\bar{x})	NA	NA	NA	3.71	

* The previous year's wording was "Administrators support and encourage teachers to use instructional technology in the classroom."

**The previous year's wording was "Teachers are generally positive about introducing/using instructional technology in the classroom."

Topic 2. Assessment of NASA CONNECT™

In this section of the evaluation process, we polled respondents regarding their overall opinions of NASA CONNECT™ as compared to other instructional programs using criteria specific to the NASA CONNECT™ program series and its components. From the means in table 13, we can conclude that the NASA CONNECT™ program series continues to be of above average educational quality and continues to enhance the teaching of mathematics, science, and technology. Furthermore, respondents indicated that the programs were appropriately aligned with national standards and raised student awareness of careers in mathematics, science, and technology. The average mean for questions in this section for the 2003–2004 season is ($\bar{x} = 4.45$), which is higher than last year ($\bar{x} = 4.25$). This increase indicates continuing and improving satisfaction with the NASA CONNECT™ series. The mean for the current season was above the average of the means for the current and past three seasons for the first four questions, and the average fell slightly below for the statement, “programs were aligned with national math, science, and technology standards” and “programs presented females and minorities performing challenging engineering and science tasks.” This slight change is not a matter for immediate concern because the means are still quite high ($\bar{x} = 4.52$ and $\bar{x} = 4.42$), but we need to watch these indicators in the future. At times in the past, the mean for “Program content was easily incorporated into the curriculum” has been relatively low, and it is encouraging to see it increase this year.

Table 13. Overall Assessment of NASA CONNECT™ Comparison Means

Question	2000–2001	2001–2002	2002–2003	2003–2004	Average
The programs were easily incorporated into the curriculum.	4.03	3.99	4.08	4.28	4.10
The programs enhanced the integration of mathematics, science, and technology.	4.57	4.56	4.31	4.53	4.49
The programs raised student awareness of careers that require mathematics, science, and technology.	4.56	4.54	4.20	4.48	4.45
The programs demonstrated the application of mathematics, science, and technology on the job.	4.61	4.63	4.27	4.47	4.50
The programs were aligned with national mathematics, science, and technology standards.*	4.62	4.62	4.40	4.52	4.54
The programs presented females and minorities performing challenging engineering and scientific tasks.**	4.47	4.55	4.22	4.42	4.42
Average (\bar{x})	4.48	4.48	4.25	4.45	

* The previous year’s wording was “The program content was aligned with the national mathematics, science, and technology standards.”

**The previous year’s wording was “The programs presented women and minorities performing challenging engineering and scientific tasks.”

Topic 3. The NASA CONNECT™ Broadcast/Video Programs

As in previous years, respondents are divided in terms of “how they use the broadcasts” in the NASA CONNECT™ series. More than 50 percent of respondents use the broadcasts either to (1) *introduce* or (2) *reinforce* a topic, objective, or skill. Although the broadcasts in the NASA CONNECT™ series were used in grades K–16, they were used with considerably greater frequency in the target grade levels of 6–8 during this season and the previous season. When considering the means of the nine “quality” indicators in table 14, survey respondents once again gave the instructional broadcasts high marks for artistic, technical, and instructional quality, with an average mean of $\bar{x} = 4.47$ for the nine questions. Mostly, the means for the current season are above means for previous seasons, with no significant drops where the means are lower. Furthermore, all this year’s means are above the average of the four means shown in the table in the far right column. Overall, we interpret these findings to mean that the broadcasts in the NASA CONNECT™ series are (1) being used by educators; (2) being used by educators as an instructional resource; (3) being used predominantly in the intended grades; and (4) continue to be of high artistic, technical, and instructional quality.

Table 14. Quality of NASA CONNECT™ Television/Video Programs Comparison Means

Question	2000–2001	2001–2002	2002–2003	2003–2004	Average
The programs were of good artistic quality.	4.39	4.45	4.12	4.49	4.36
The programs were of good technical quality.	4.56	4.51	4.27	4.54	4.47
The programs enabled me to accommodate different learning styles.	4.21	4.31	4.03	4.44	4.25
The programs were well organized.	NA	NA	NA	4.42	NA
The programs made learning science and math interesting.	NA	NA	NA	4.59	NA
The programs increased my students’ knowledge of science and math.	NA	NA	NA	4.47	NA
The programs were a valuable instructional aid.	4.47	4.58	4.25	4.54	4.46
The programs were appropriate for the specified grade level.*	3.88	4.36	4.03	4.33	4.15
The programs increased student motivation and enthusiasm for learning.**	4.29	4.38	4.21	4.45	4.33
Average (\bar{x})	NA	NA	NA	4.47	

* The previous year’s wording was “The programs were developmentally appropriate for the grade level.”

**The previous year’s wording was “The programs increased student enthusiasm for learning.”

Topic 4. NASA CONNECT™ Educator Guides

The educator guides for the NASA CONNECT™ series contain the applicable standards, objectives, resources, and lesson extensions. Considering the educator guides in the 2003–2004 NASA CONNECT™ series, approximately 69 percent of respondents indicated that they were either using the educator guides or intended to do so in the future. The average mean quality rating for the educator guide in the 2003–2004 NASA CONNECT™ season shown in the bottom row of table 15 is $\bar{x} = 4.33$. The means for this season are generally higher than those for previous years, and all the means for this season are higher (some significantly so) than last season. The quality factors receiving the highest values were the print and electronic resources ($\bar{x} = 4.48$) and the background portion of the guide ($\bar{x} = 4.37$). The quality factor, “easy to download from the Internet,” received the lowest rating ($\bar{x} = 4.15$), but it has shown a steady increase over past seasons. We interpret these findings to indicate that in addition to the guides being used, the overall quality of the guides is high and continues to improve. Finally, given that the guides are available from the NASA CONNECT™ web site as PDF files, any difficulties encountered downloading the guides from the Internet are best associated with equipment and network considerations or user error and have less to do with the overall quality of the guides.

Table 15. Quality of NASA CONNECT™ Educator Guides* Comparison Means

Question	2000–2001	2001–2002	2002–2003	2003–2004	Average
The educator guides* were a valuable instructional aid.	4.36	4.44	4.26	4.38	4.36
The educator guides* were easy to download from the Internet.	4.00	4.08	4.05	4.15	4.07
The educator guides* correlated well with the video.	NA	NA	NA	4.33	NA
The directions/instructions in the educator guides were easy to understand.**	4.28	4.23	4.09	4.25	4.21
The layout of the educator guides* presented the information clearly.	4.31	4.43	4.13	4.34	4.30
The print and electronic resources in the educator guides were valuable to me.***	4.27	4.40	4.14	4.48	4.32
In the educator guides, the teacher “background” portion was valuable to me.****	4.48	4.48	4.22	4.37	4.39
Average (\bar{x})	NA	NA	NA	4.33	

* In previous years, the educator guides were called lesson guides in all the questions.

** The previous year’s wording was “The directions/instructions in the educator guides were easily understood.”

*** The previous year’s wording was “The print and electronic resources in the lesson guides were a valuable instruction aid.”

****The previous year’s wording was “The teacher “background” portion of the lesson guide was a valuable instructional aid.”

Topic 5. NASA CONNECT™ Classroom Activities/Experiments

Each NASA CONNECT™ program includes a hands-on activity or experiment that is designed to reinforce the mathematics, science, and technology concepts included in the instructional program and in the classroom. The use of these activities in the 2003–2004 NASA CONNECT™ series totaled 71 percent of respondents, who indicated that they were using or intended to use these activities in the future.

The average mean quality ratings listed in table 16 for the classroom activities in the 2003–2004 NASA CONNECT™ series is $\bar{x} = 4.27$, up significantly from 2002–2003. The 2003–2004 means were all higher than the 2002–2003 means. The quality factors receiving the highest values were the “activities/experiments complemented the lesson” ($\bar{x} = 4.45$) and “the activities/experiments were appropriate for the specified grade level” ($\bar{x} = 4.36$). The quality factor, the “activities/experiments were easy for me to use” ($\bar{x} = 4.06$) received the lowest rating. These findings indicate that efforts taken over past seasons to rectify implementation and appropriateness of the activities have been positively received and that “the ease of use” needs the most improvement. This trend is an important one to watch, as it needs to continue its positive slope to meet truly satisfactory levels; however, it is significant to note that no ratings fell below $\bar{x} = 4.00$ as they did in previous years.

Table 16. Quality of NASA CONNECT™ Activities and Experiments Comparison Means

Question	2000–2001	2001–2002	2002–2003	2003–2004	Average
The activities/experiments were easily incorporated into my lesson plan.*	3.92	4.18	3.96	4.19	4.06
The activities/experiments complemented the lesson for each show.**	4.20	4.39	4.15	4.45	4.30
The activities/experiments were appropriate for the specified grade level.***	3.76	4.29	4.03	4.36	4.11
The activities/experiments were easy for me to use.****	3.86	4.34	4.04	4.06	4.08
Average (\bar{x})	3.94	4.30	4.05	4.27	

* The previous year’s wording was “The classroom activity (experiment) was easily incorporated into my lesson plan.”

** The previous year’s wording was “The classroom activity (experiment) complemented the lesson for each show.”

*** The previous year’s wording was “The classroom activity (experiment) was developmentally appropriate for the grade level.”

****The previous year’s wording was “The classroom activities (experiments) were easy for me to use.”

Topic 6. NASA CONNECT™ On-Line Activities

Each NASA CONNECT™ program includes an on-line activity that is designed to reinforce the mathematics, science, and technology concepts included in the instructional program and the classroom and also to provide teachers an opportunity to introduce technology into the classroom. The usage rate for the 2003–2004 NASA CONNECT™ on-line activities show 69 percent of respondents either using this component of the NASA CONNECT™ series or intending to do so in the future. The 30 percent of respondents using the on-line activities is up considerably from previous years, during which the percentages were often as low as a few percent for some of the programs. Respondents also overwhelmingly

rated the on-line activities to be “above average.” While some respondents gave “about average” as an answer to this query, no respondents indicated that the activities were worse than average.

Concerning the quality of the on-line activities, respondents were asked to reply to six “quality” criteria. The quality factors receiving the highest means in table 17 were “the on-line activities enhanced the integration of mathematics, science and technology” ($\bar{x} = 4.30$) and “the on-line activities raised student awareness of careers that require mathematical, technological, and scientific knowledge” (4.24). When considering the quality factor response, “students were able to complete the on-line activities in a reasonable amount of time,” respondents gave the lowest rating ($\bar{x} = 3.97$), which was an increase over last year’s response ($\bar{x} = 3.82$) to this query. The overall mean for this section comes to $\bar{x} = 4.16$, which is up from $\bar{x} = 4.06$ for last season, and all the means were greater for this season than for the previous ones. We interpret these findings to indicate that the on-line activities are being used significantly more than in previous years, that the overall quality of the on-line activities is high, and that we need to address the amount of time required for the on-line activities.

Table 17. Quality of NASA CONNECT™ On-Line* Activities Comparison Means

Question	2000–2001	2001–2002	2002–2003	2003–2004	Average
The on-line* activities were easily integrated into the curriculum.	3.83	4.30	4.10	4.13	4.09
The on-line* activities raised student awareness of careers that require mathematical, technological, and scientific knowledge.	4.17	4.40	4.24	4.24	4.26
Students were able to complete the on-line* activities in a reasonable amount of time.	3.94	4.30	3.82	3.97	4.01
The on-line* activities accommodated various learning styles.	4.00	4.30	4.00	4.21	4.13
The content for the on-line* activities was appropriate for my students.	3.88	4.36	3.98	4.13	4.09
The on-line* activities enhanced the integration of mathematics, science, and technology.	4.17	4.54	4.20	4.30	4.30
Average (\bar{x})	4.00	4.37	4.06	4.16	

*Web-based was used in place of on-line in previous years’ surveys.

Topic 7. NASA CONNECT™ Web Site

The average mean quality rating for questions asked about the NASA CONNECT™ web site is $\bar{x} = 4.32$ for the 2003–2004 NASA CONNECT™ season—a significant increase over last season’s data, which brings the web site ratings back to an acceptable level.

Table 18. Quality of NASA CONNECT™ Web Site Comparison Means

Question	2000–2001	2001–2002	2002–2003	2003–2004	Average
The NASA CONNECT™ web site is visually appealing.	4.55	4.56	4.26	4.37	4.44
The NASA CONNECT™ * web site is easy to navigate.	4.38	4.32	4.13	4.20	4.26
The links to other sites/pages are current/up to date.**	4.37	4.38	4.14	4.38	4.32
Average (\bar{x})	4.43	4.42	4.18	4.32	

* In previous years, this question was worded as “The web site is easily navigated.”

**In previous years, this question was worded as “The links to other sites/pages are current.”

Topic 8. Overall Assessment

In this section, we asked respondents to reply to three qualitative inquiries intended to indicate the degree to which users were satisfied with the 2003–2004 NASA CONNECT™ series, inclusive of all its components. Overwhelmingly, as in past seasons, respondents indicated that they would recommend NASA CONNECT™ to a colleague, that NASA CONNECT™ does achieve its goal of informing others about what NASA does, and that the information in NASA CONNECT™ is “very credible.” We can interpret that these data indicate that the users of the 2003–2004 NASA CONNECT™ program series are significantly satisfied with its effectiveness as an instructional enhancement tool.

Topic 9. Videoconferencing

We polled respondents about their access to and interest in videoconferencing technologies. Access and interest in these technologies were relatively light and may be attributed to the cost and availability of videoconferencing technologies, as well as time and space constraints, as already discussed in this evaluation. Perhaps with time, as these technologies become more prominent, these views will change and become more positive.

Concluding Remarks

NASA CONNECT™ is an instructional resource that is designed to integrate mathematics, science, and technology in grades 6–8. A self-reported, electronic survey was sent to 1,200 individuals randomly selected from the database of NASA CONNECT™ registrants. Based on the responses, the following facts have been established for the 2003–2004 NASA CONNECT™ series.

According to survey respondents, educators view NASA CONNECT™ as a beneficial instructional resource. Respondents report that (1) the instructional broadcast is most often taped for use at a later date rather than being used “live”; (2) some parts of a NASA CONNECT™ program are used more frequently than other parts; and (3) NASA CONNECT™ is used most often to reinforce topics, objectives, or skills.

Furthermore, it appears that the changes/improvements that were implemented as a result of the 1998–1999, 1999–2000, 2000–2001, 2001–2002, and 2003–2004 evaluations were well received by NASA CONNECT™ registrants. The 2003–2004 NASA CONNECT™ data led evaluators to conclude that the activities are educationally sound and offer educators and students a complete and valuable educational suite.

In marketing, there are three significant measures of success: (1) repeat purchasing, (2) whether or not a product is recommended to others, and (3) how that product fares in a competitive environment. The fact that 21 participants in the 2003–2004 survey had used the programs for 2 years, 14 used the programs for 3 years, 21 used the programs for 4 years, and 21 used the programs for 5 years supports the first measure of success: repeat purchasing. The fact that 99.6 percent of the respondents would recommend NASA CONNECT™ to a colleague supports the second measure: product recommendation. The third measure, “How NASA CONNECT™ fares in a competitive environment” is demonstrated by the fact that 88 percent of respondents reported that NASA CONNECT™ was better than existing and similar (science) instructional programming. Collectively, the findings of this report support the continued production of NASA CONNECT™.

Based on the quantitative and qualitative data, we can offer the following eight recommendations as part of the on-going effort to continuously improve the NASA CONNECT™ program series.

Data 1: Although there is general agreement among the respondents that instructional technology helps educators teach more effectively and enriches the learning process, respondents indicated that certain factors—(1) lack of computers and computer access, (2) lack of available classroom time, and (3) lack of control over what (instructional programs and materials) can be used in the classroom—combine to limit the use of instructional technology programs such as NASA CONNECT™. These data appear to correlate with data obtained from several large-scale (national) instructional technology studies and indicate that the views held by respondents to this study regarding instructional technology are very similar to those held by their peers. What is not known is that if these three factors were removed or otherwise mitigated, would the use of instructional technology among the respondents increase? That said, it might be useful to add questions to the existing survey to determine the extent to which respondents have been trained to use or are otherwise predisposed to use instructional technology in the classroom.

Recommendation 1: Using an appropriate methodology, determine (1) the extent to which registered users of NASA CONNECT™ have been trained to use and to integrate instructional technology into the curriculum and (2) whether a professional development (i.e., training) component should be developed for NASA CONNECT™.

Data 2: Survey participants consider NASA CONNECT™ a beneficial (instructional) resource that enhances and enriches teaching and learning. Collectively, the data support the continued production of the series. It is important to note that NASA CONNECT™ ranks well above average with regard to national trends in instructional technology and programming and is viewed as a valued resource by its users. NASA CONNECT™ has also showed significant increases in mean value ratings over previous years’ data.

Recommendation 2: As part of conference attendance and especially as part of any conference presentation, it might be instructive to conduct interviews with educators as a (1) way of learning more about the suitability/usability of NASA CONNECT™ and as a means of (2) identifying barriers that might prohibit or inhibit its use, such as “a fixed curriculum” or “the amount of time available to teach science.” Lastly, it seems that increased use of the programs might result from greater explanation and demonstration of NASA CONNECT™. Therefore, participation in pre-service and in-service education workshops and as part of technology exhibits might result in increased use.

Data 3: Several respondents indicated they had difficulty acquiring/obtaining the programs. “Our PBS station does not air the NASA programs” was most frequently reported. Several homeschoolers reported having problems acquiring the programs. Some respondents complained about having difficulty obtaining NASA CONNECT™ video programs from a NASA ERC.

Recommendation 3: Conduct an investigation for the purpose of ascertaining the nature of the problems/difficulties registered users have receiving/obtaining NASA CONNECT™ programs and determine what can be done to resolve them.

Data 4: The lowest scoring question pertaining to the activities/experiment was “the (hands-on) activities/experiments were easy for me to use,” while comments taken from the qualitative data were wholly positive and prophetic in tone. The only insight is that one respondent stated “most were great—some materials were not available.”

Recommendation 4: Conduct an investigation designed to determine whether (1) the users had difficulty obtaining materials and the specific problems users experienced in securing these materials, and (2) in general, what actions/recommendations can we take or offer to help users more “easily” secure materials related to the NASA CONNECT™ hands-on activities.

Data 5: The lowest scoring question that pertains to the on-line activities was “Students were able to complete the on-line activities in a reasonable amount of time.” However, usage of the on-line activities is lower than other components of the NASA CONNECT™ series.

Recommendation 5: Conduct an investigation designed to (1) determine why the usage of the on-line activities is lower and (2) what actions/recommendations can we take or offer so “Students are able to complete the on-line activities in a reasonable amount of time.”

Data 6: Although not specifically stated, we can infer from the data that (1) lack of computers and computer access, (2) lack of available classroom time, and (3) lack of control over what (instructional programs and materials) can and cannot be used in the classroom are likely explanations (causes) for not using NASA CONNECT™ on-line activities.

Recommendation 6: Determine (1) those factors responsible for “non-use” of the on-line activities by registered users and (2) what can be done to increase usage of NASA CONNECT™ on-line activities.

Data 7: The survey indicated that the NASA CONNECT™ web site could be improved by making items faster to download. Two factors are relevant to the discussion: (1) concerning the Internet, download speed is related to and controlled by the connection speed of the user’s service provider and system, and (2) the process is controlled, to a limited extent, by the web (host) site.

Recommendation 7: Determine (1) the factors responsible for “non-use” of the NASA CONNECT™ web site by registered users and (2) what can be done to increase web site usage.

Data 8: Of these respondents, 57 indicated that they would be interested in having their students participate in a NASA-sponsored videoconference. When asked about a language preference for such a videoconference, 75 percent of respondents specified English as their preferred language, 14 percent selected Spanish, and 11 percent indicated a preference for both English and Spanish.

Recommendation 8: Attempts should be made to follow-up with the respondents who indicated an interest in having their students participate in a NASA-sponsored videoconference.

Data 9: As of September 30, 2004, 288,462 (formal and informal) educators, representing 8.7 million students and 468 television stations, with a combined (potential) audience of 156.9 million, were registered users of NASA CONNECT™.

Recommendation 9: Starting with the 2004–2005 NASA CONNECT™ season, the minimum number of completed surveys should be set at 300 (with 350 being ideal). Continue efforts to increase the number of registered informal educators. Continue efforts to increase the number of television stations airing NASA CONNECT™, with special emphasis on increasing the number of PBS stations airing NASA CONNECT™.

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Appendix A



National Aeronautics and
Space Administration

Langley Research Center
Hampton, VA 23681-2199

Educational Product	
Educators	Gr ades 6-8

EP-2003-06-08-LARC

NASA CONNECT™

NASA CONNECT™ is a research-, inquiry-, and standards-based annual series of **FREE** integrated math, science, and technology instructional programs for students in grades 6–8. Each program in this Emmy®-award-winning series has three components: (1) a 30-minute television broadcast, which can be viewed live or taped for later use; (2) a companion educator guide, including a hands-on activity; and (3) an interactive web activity that provides educators an opportunity to integrate technology in the classroom setting. These three components — television broadcast, educator guide, and web activity — are designed as an integrated instructional package.

Use the Power of Technology to Make the NASA Connection*

This opportunity is offered as a part of NASA LIVE™: (Learning through Interactive Videoconferencing Experiences), a program produced by NASA Langley's Center for Distance Learning.

Now, in addition to the broadcast, educator guide, and web activity, your students can participate in a **FREE** virtual field trip. This 45-minute, interactive videoconference connects them to the NASA experts featured in each new NASA CONNECT™ program, the latest research, exciting demonstrations, and more. See reverse side for a list of scheduled events. Don't miss this exciting opportunity to bring math, science, and technology to life!!

*Students must have viewed the NASA CONNECT™ broadcast prior to participating. Participation is limited to the first four schools for each original event. Additional sessions can be scheduled upon request. To register for a NASA LIVE™ event and additional information, visit <http://live.larc.nasa.gov>.

Rights and Use

Not copyrighted. No fees/licensing agreements. Off-air rights unlimited granted in perpetuity.



Zot

Norbert

FREE CLASSROOM MENTORS

The AIAA provides classroom mentors to assist with the hands-on activities. For more information, visit the NASA CONNECT™ web site or e-mail nasaconnect@aiaa.org.



www.vbcs.com



www.pbs.org

Endorsed by



www.nctm.org



Check the back for a list of programs in the 2003–2004 NASA CONNECT™ series and for more information about obtaining the programs.

2003–2004 SEASON

connect.larc.nasa.gov

NASA CONNECT™

2003-2004 SEASON

Inspiring the next generation of explorers as only NASA can.

2003-2004 Season. Grades 6-8.
<http://connect.larc.nasa.gov>

Program 1: The Centennial of Flight Special Edition: Problem Solving: The "Wright" Math (R)*

Starts airing: Thursday, September 18, 2003,
11 a.m.-11:30 a.m. EDT
NASA engineers and researchers use problem-solving skills to develop advanced aerospace vehicles that are adaptable to diverse mission scenarios.
NASA Research: Morphing Project

Program 2: Virtual Earth

Starts airing: Thursday, October 16, 2003,
11 a.m.-11:30 a.m. EDT
NASA LIVE Event: November 13, 2003
NASA researchers and scientists use data analysis and measurement to develop a scientific understanding of the Earth system and its response to natural and human-induced changes to enable improved prediction of climate, weather, and natural hazards for present and future generations.
Mathematics concepts: Data Analysis and Measurement
Science concepts: Earth as a System
NASA Research: Earth System Science

Program 3: Better Health from Space to Earth

Starts airing: Thursday, November 20, 2003,
11 a.m.-11:30 a.m. EST
NASA researchers and scientists use measurement and estimation skills to help characterize health, environmental, and other operational human biomedical risks associated with living in space and to identify strategies, tools, or technologies to prevent or reduce those risks.
Mathematics concepts: Measurement and Estimation
Science concepts: Life Science and Health
NASA Research: Bioastronautics

Program 4: Festival of Flight Special: Opening Space for Next Generation Explorers (R)*

(Produced for NASA CONNECT™ by NASA Marshall TV)
Starts airing: Thursday, December 11, 2003,
11 a.m.-11:30 a.m. EST
NASA's Space Launch Initiative (SLI) Program will ultimately move the nation from the explorations of the Mercury, Gemini, Apollo, and Space Shuttle missions to a new period of pioneering when people and businesses are more routinely traveling, working, and living in space.
NASA Research: Space Launch Initiative (SLI), Second Generation Reusable Launch Vehicle (RLV) Program

Program 5: PSA, The Astronaut's Helper

(Produced for NASA CONNECT™ by NASA Ames TV)
Starts airing: Thursday, January 22, 2004,
11 a.m.-11:30 a.m. EST
NASA LIVE Event: January 22, 2004
NASA engineers use geometry and algebra to develop and test the Personal Satellite Assistant (PSA), an autonomous robot to support future space missions.
Mathematics concepts: Geometry and Algebra
Science concepts: Physical Science
NASA Research: Personal Satellite Assistant (PSA)

Program 6: Data Analysis and Measurement: Dancing in the Night Sky (R)*

Starts airing: Thursday, February 19, 2004,
11 a.m.-11:30 a.m. EST
NASA engineers and researchers use data analysis and measurement to study the auroras, key regions of the Earth's geospace or space environment.
NASA Research: IMAGE Satellite, POLAR Satellite, TIMED Satellite

Program 7: The Venus Transit

Starts airing: Thursday, March 18, 2004,
11 a.m.-11:30 a.m. EST
NASA LIVE Event: April 15, 2004
NASA researchers and scientists use measurement, ratios, and graphing to set the scale of the solar system, study the planet Venus, and investigate the solar-planetary connection.
Mathematics concepts: Measurement, Ratios, and Graphing
Science concepts: Physical Science
NASA Research: SOHO Satellite, TRACE Satellite

Program 8: Measurement, Ratios, and Graphing: Who Added the "Micro" to Gravity? (R)*

Starts airing: Thursday, April 15, 2004,
11 a.m.-11:30 a.m. EDT
NASA researchers and scientists use measurement, ratios, and graphing to demonstrate the principles of microgravity.
NASA Research: Microgravity Research Program

Program 9: The "A" Train Express

Starts airing: Thursday, May 20, 2004,
11 a.m.-11:30 a.m. EDT
NASA LIVE Event: June 3, 2004
Take a ride on the "A" Train Express. NASA researchers and scientists use satellites and problem solving to improve weather prediction and our understanding of aerosols and clouds.
Mathematics concepts: Problem Solving
Science concepts: Weather and Meteorology
NASA Research: CALIPSO Satellite, CLOUDSAT Satellite

1 REGISTER

Register online at
connect.larc.nasa.gov

2 ACCESS

How can I get the television broad- cast?

- The programs are up-linked in KU- and C-band. The satellite coordinates are listed on the NASA CONNECT™ web site.
- NASA CONNECT™ programs air on PBS, NASA TV, Channel One, and on many Cable Access Channels. Check our web site for stations in your area.
- Programs are available online. See web site for details.
- Video copies of the broadcast can be obtained from the NASA Educator Resource Center in your state, <http://education.nasa.gov/ercn>, or from NASA CORE <http://core.nasa.gov>, or call toll free, 1-866-776-CORE.

3 INTEGRATE

Integrate NASA CONNECT™ into your classroom to inspire your students and to enhance learning

*(R) indicates a repeat program from the 2002-2003 NASA CONNECT™ season.



See web site for NCTM, NRC, ITEA, and ISTE standards covered in each program.

Appendix B

2003-2004 NASA CONNECT™ Evaluation

Please confirm the following information:

First Name

Last Name

Address:

City:

State:

Zip:

Email:

Instructional Technology (In General) and Teaching

Please indicate the extent to which you Disagree or Agree with the following statements about using instructional technology in the classroom.

1. In general, instructional technology helps teachers to teach more effectively. (Check one.)

Strongly Disagree ☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐ 5 Strongly Agree ☐ No Opinion ☐

2. Instructional technology helps teachers accommodate different learning styles. (Check one.)

Strongly Disagree ☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐ 5 Strongly Agree ☐ No Opinion ☐

3. Instructional technology helps teachers to be more creative. (Check one.)

Strongly Disagree ☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐ 5 Strongly Agree ☐ No Opinion ☐

4. Instructional technology improves student learning comprehension.

Strongly Disagree ☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐ 5 Strongly Agree ☐ No Opinion ☐

5. Instructional technology increases student motivation and enthusiasm for learning. (Check one.)

Strongly Disagree ☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐ 5 Strongly Agree ☐ No Opinion ☐

6. In my experience, administrators support and encourage teachers to use instructional technology in the classroom. (Check one.)

1 2 3 4 5
Strongly Disagree ☐ ☐ ☐ ☐ ☐ Strongly Agree ☐ No Opinion

7. Teachers are generally eager to use instructional technology in the classroom. (Check one.)

1 2 3 4 5
Strongly Disagree ☐ ☐ ☐ ☐ ☐ Strongly Agree ☐ No Opinion

8. In general, the instructional programs I've seen are of good quality. (Check one.)

1 2 3 4 5
Strongly Disagree ☐ ☐ ☐ ☐ ☐ Strongly Agree ☐ No Opinion

9. The technology training provided by my school division has improved my computer skills. (Check one.)

1 2 3 4 5
Strongly Disagree ☐ ☐ ☐ ☐ ☐ Strongly Agree ☐ No Opinion

10. Are there any barriers that keep you from using more technology in your teaching? (Check all that apply.)

- ☐ No barriers
- ☐ Not enough/limited access to computers
- ☐ Not enough computer software
- ☐ Lack of time available in school for technology projects
- ☐ Lack of technical support/help for technology projects

NASA CONNECT™ Programs

These questions refer to the 9 programs in the 2003-2004 NASA CONNECT™ series.

11. Have you used any of the 9 NASA CONNECT™ 2003-2004 programs? (Check one.)

- ☐ Yes
- ☐ No (Skip to Q48.)
- ☐ No, but I may in the future (Skip to Q48.)

12. What grade level(s) viewed the NASA CONNECT™ programs? (Mark all that apply.)

K	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

13. Compared to other instructional programming, is the OVERALL quality of NASA CONNECT™: (Check one.)

- ☐ Better than average
- ☐ About average
- ☐ Worse than average

14. Compared to the VIDEO in other instructional programs, were the NASA CONNECT™ VIDEOS: (Check one.)

- ☐ Better than average
- ☐ About average
- ☐ Worse than average

15. Did your students view Program 1 - The Centennial of Flight Special Edition: Problem Solving, The 'Wright' Math? (Check one.)

- ☐ Yes
- ☐ No

16. Did your students view Program 2 - Virtual Earth? (Check one.)

- ☐ Yes
- ☐ No

17. Did your students view Program 3 - Better Health From Space to Earth? (Check one.)

- ☐ Yes
- ☐ No

18. Did your students view Program 4 - Festival of Flight Special: Opening Space for Next Generation Explorers? (Check one.)

- ☐ Yes
- ☐ No

19. Did your students view Program 5 - PSA, The Astronaut's Helper? (Check one.)

- ☐ Yes
☐ No

20. Did your students view Program 6 - Data Analysis and Measurement: Dancing in the Night Sky? (Check one.)

- ☐ Yes
☐ No

21. Did your students view Program 7 - The Venus Transit? (Check one.)

- ☐ Yes
☐ No

22. Did your students view Program 8 - Measurement, Ratios, and Graphing: Who Added the 'Micro' to Gravity? (Check one.)

- ☐ Yes
☐ No

23. Did your students view Program 9 - The 'A' Train Express? (Check one.)

- ☐ Yes
☐ No

24. In general, how did you use the NASA CONNECT™ programs? Were they ever used to introduce a curriculum topic, objective, or skill? (Check one.)

- ☐ Yes
☐ No

25. Were the programs used to reinforce a curriculum topic, objective, or skill? (Check one.)

- ☐ Yes
☐ No

26. Were they ever used as a special interest topic? (Check one.)

- ☐ Yes
☐ No

27. Were they used as a break from classroom routine? (Check one.)

- ☐ Yes
- ☐ No

28. How do you usually receive the NASA CONNECT™ programs? (Check one.)

- ☐ From PBS/ITV
- ☐ By downloading it
- ☐ A media specialist taped it to show later.
- ☐ I (or another teacher) taped it to show later.
- ☐ I get the tapes from NASA's Educator Resource Center (ERC).
- ☐ Other

29. How many years have you used NASA CONNECT™ programs? ____ years (1 = 1 or less)

30. Did you experience any difficulty obtaining any of the 2003-2004 NASA CONNECT™ programs? (Check one.)

- ☐ Yes
- ☐ No

Please indicate the extent to which you disagree or agree with the following statements concerning the 2003-2004 NASA CONNECT™ series programs.

31. The programs were well organized. (Check one.)

- | | | | | | | | |
|-------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|----------------|--------------------------|
| | 1 | 2 | 3 | 4 | 5 | | No Opinion |
| Strongly Disagree | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | Strongly Agree | <input type="checkbox"/> |

32. The programs were of good artistic quality. (Check one.)

- | | | | | | | | |
|-------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|----------------|--------------------------|
| | 1 | 2 | 3 | 4 | 5 | | No Opinion |
| Strongly Disagree | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | Strongly Agree | <input type="checkbox"/> |

33. The programs were of good technical quality. (Check one.)

- | | | | | | | | |
|-------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|----------------|--------------------------|
| | 1 | 2 | 3 | 4 | 5 | | No Opinion |
| Strongly Disagree | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | Strongly Agree | <input type="checkbox"/> |

34. The programs made learning science and math interesting. (Check one.)

1 2 3 4 5 No Opinion
Strongly Disagree ☐ ☐ ☐ ☐ ☐ Strongly Agree ☐

35. The programs helped me to accommodate different learning styles. (Check one.)

1 2 3 4 5 No Opinion
Strongly Disagree ☐ ☐ ☐ ☐ ☐ Strongly Agree ☐

36. The programs increased my students' knowledge of science and math. (Check one.)

1 2 3 4 5 No Opinion
Strongly Disagree ☐ ☐ ☐ ☐ ☐ Strongly Agree ☐

37. The programs increased student motivation and enthusiasm for learning. (Check one.)

1 2 3 4 5 No Opinion
Strongly Disagree ☐ ☐ ☐ ☐ ☐ Strongly Agree ☐

38. The programs were a valuable instructional aid. (Check one.)

1 2 3 4 5 No Opinion
Strongly Disagree ☐ ☐ ☐ ☐ ☐ Strongly Agree ☐

39. The programs were appropriate for the specified grade level. (Check one.)

1 2 3 4 5 No Opinion
Strongly Disagree ☐ ☐ ☐ ☐ ☐ Strongly Agree ☐

40. The programs were easily incorporated into the curriculum. (Check one.)

1 2 3 4 5 No Opinion
Strongly Disagree ☐ ☐ ☐ ☐ ☐ Strongly Agree ☐

41. The programs enhanced the integration of mathematics, science, and technology. (Check one.)

1 2 3 4 5 No Opinion
Strongly Disagree ☐ ☐ ☐ ☐ ☐ Strongly Agree ☐

42. The programs raised student awareness of careers that require mathematics, science, and technology. (Check one.)

1 2 3 4 5 No Opinion
Strongly Disagree ☐ ☐ ☐ ☐ ☐ Strongly Agree ☐

43. The programs demonstrated the application of mathematics, science, and technology on the job. (Check one.)

	1	2	3	4	5		No Opinion
Strongly Disagree	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Strongly Agree	<input type="checkbox"/>

44. The programs were aligned with national mathematics, science, and technology standards. (Check one.)

	1	2	3	4	5		No Opinion
Strongly Disagree	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Strongly Agree	<input type="checkbox"/>

45. The programs presented females and minorities performing challenging engineering and scientific tasks. (Check one.)

	1	2	3	4	5		No Opinion
Strongly Disagree	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Strongly Agree	<input type="checkbox"/>

46. Is the 30-minute length of the programs: (Check one.)

- ☐ Too short
- ☐ Just right
- ☐ Too long

47. Please add any other comments you have concerning the 2003-2004 NASA CONNECT™ programs.

About the Educator Guides

48. Did you use the educator guides for any of the 2003-2004 NASA CONNECT™ programs? (Check one.)

- ☐ Yes
- ☐ No (Skip to Q64.)
- ☐ No, but I may in the future (Skip to Q64.)

49. Compared to other EDUCATOR GUIDES, were NASA CONNECT™ educator guides: (Check one.)

- ☐ Better than average
- ☐ About average
- ☐ Worse than average
- ☐ I didn't review the guides

Please indicate the extent to which you disagree or agree with the following statements about the EDUCATOR GUIDES.

50. The educator guides were a valuable instructional aid. (Check one.)

Strongly Disagree ☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐ 5 Strongly Agree ☐ No Opinion ☐

51. The educator guides were easy to download from the Internet. (Check one.)

Strongly Disagree ☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐ 5 Strongly Agree ☐ No Opinion ☐

52. The educator guides correlated well with the video. (Check one.)

Strongly Disagree ☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐ 5 Strongly Agree ☐ No Opinion ☐

53. The directions/instructions in the educator guides were easy to understand. (Check one.)

Strongly Disagree ☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐ 5 Strongly Agree ☐ No Opinion ☐

54. The layout of the educator guides presented the information clearly. (Check one.)

Strongly Disagree ☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐ 5 Strongly Agree ☐ No Opinion ☐

55. The print and electronic resources in the educator guides were valuable to me. (Check one.)

Strongly Disagree ☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐ 5 Strongly Agree ☐ No Opinion ☐

56. In the educator guides, the teacher "background" portion was valuable to me. (Check one.)

Strongly Disagree ☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐ 5 Strongly Agree ☐ No Opinion ☐

57. Please add any other comments you have concerning the educator guides.

Hands-On Activities

58. Did you use the hands-on activities/experiments from the educator guides for any of the 2003-2004 NASA CONNECT™ programs? (Check one.)

- ☐ **Yes**
- ☐ **No (Skip to Q64.)**
- ☐ **No, but I may in the future (Skip to Q64.)**

Please indicate the extent to which you disagree or agree with the following statements about the HANDS-ON ACTIVITIES/EXPERIMENTS from the educator guides.

59. The activities/experiments were easy for me to use. (Check one.)

	1	2	3	4	5		No Opinion
Strongly Disagree	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Strongly Agree	<input type="checkbox"/>

60. The activities/experiments were easily incorporated into my lesson plan. (Check one.)

	1	2	3	4	5		No Opinion
Strongly Disagree	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Strongly Agree	<input type="checkbox"/>

61. The activities/experiments complemented the lesson for each show. (Check one.)

	1	2	3	4	5		No Opinion
Strongly Disagree	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Strongly Agree	<input type="checkbox"/>

62. The activities/experiments were appropriate for the specified grade level. (Check one.)

	1	2	3	4	5		No Opinion
Strongly Disagree	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Strongly Agree	<input type="checkbox"/>

63. Please add any other comments you have concerning the hands-on activities/experiments.

The On-Line Activities

64. Did your students use any of the on-line activities found on the NASA CONNECT™ web site? (Check one.)

- ☐ Yes
- ☐ No (Skip to Q73.)
- ☐ No, but I may in the future (Skip to Q73.)

65. Compared to other web-based activities, was the quality of the WEB-BASED ACTIVITIES for NASA CONNECT™: (Check one.)

- ☐ Better than average
- ☐ About average
- ☐ Worse than average
- ☐ I didn't review the web-based activities

Please indicate the extent to which you agree or disagree with the following statements about the ON-LINE ACTIVITIES.

66. The on-line activities were easily integrated into the curriculum. (Check one.)

	1	2	3	4	5		No Opinion
Strongly Disagree	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Strongly Agree	<input type="checkbox"/>

67. The on-line activities raised student awareness of careers that require mathematical, technological, and scientific knowledge. (Check one.)

	1	2	3	4	5		No Opinion
Strongly Disagree	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Strongly Agree	<input type="checkbox"/>

68. Students were able to complete the on-line activities in a reasonable amount of time. (Check one.)

	1	2	3	4	5		No Opinion
Strongly Disagree	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Strongly Agree	<input type="checkbox"/>

69. The on-line activities accommodated various learning styles. (Check one.)

	1	2	3	4	5		No Opinion
Strongly Disagree	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Strongly Agree	<input type="checkbox"/>

70. The content for the on-line activities was appropriate for my students. (Check one.)

	1	2	3	4	5		No Opinion
Strongly Disagree	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Strongly Agree	<input type="checkbox"/>

71. The on-line activities enhanced the integration of mathematics, science, and technology. (Check one.)

	1	2	3	4	5		No Opinion
Strongly Disagree	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Strongly Agree	<input type="checkbox"/>

72. Please add any other comments you have concerning the on-line activities.

The NASA CONNECT™ Web Site

73. Have you looked at the NASA CONNECT™ web site? (Check one.)

☐ Yes

☐ No (Skip to Q77.)

These question pertain to the web site for the 2003-2004 NASA CONNECT™ series. Please indicate the extent to which you disagree or agree with the following statements.

74. The NASA CONNECT™ web site is visually appealing. (Check one.)

	1	2	3	4	5		No Opinion
Strongly Disagree	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Strongly Agree	<input type="checkbox"/>

75. The NASA CONNECT™ web site is easy to navigate. (Check one.)

	1	2	3	4	5		No Opinion
Strongly Disagree	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Strongly Agree	<input type="checkbox"/>

76. The links to other sites/pages are current/up-to-date. (Check one.)

	1	2	3	4	5		No Opinion
Strongly Disagree	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Strongly Agree	<input type="checkbox"/>

Overall Assessment

77. If a colleague inquired, would you recommend NASA CONNECT™ to him/her? (Check one.)

☐ Yes

☐ No

78. One of our goals is to educate and inform others about what NASA does. Do you think NASA CONNECT™ has been successful in this regard? (Check one.)

- ☐ Yes
- ☐ No

79. In your opinion, was the information about NASA contained in the programs:
(Check one.)

- ☐ Very credible
- ☐ Somewhat credible
- ☐ Not credible
- ☐ I'm unable to judge

Videoconferencing

80. Do you have access to videoconferencing equipment for your instruction?
(Check one.)

- ☐ Yes
- ☐ No (Skip to Q83.)

81. In the future, would you be interested in having students participate in a NASA-sponsored video conference? (Check one.)

- ☐ Yes
- ☐ No (Skip to Q83.)

82. For a NASA-sponsored video conference, what would be your language preference? (Check one.)

- ☐ English
- ☐ Spanish
- ☐ Both English and Spanish

Demographics

These questions tell us whether the respondents with different backgrounds or characteristics have different opinions about instructional technology and NASA CONNECT™

83. Your gender?

- ☐ Female



Male

84. Do you have a personal computer at home? (Check one.)



Yes



No

85. Are you a member of a national professional education organization (e.g., ASDC, NMSA, NCTM, NSTA)? (Check one.)



Yes



No

86. How many years have you been teaching? (Enter number of years)

years (1 = 1 or less)

87. Employment? (Please check only one.)



Public school



Private or Parochial school



Bureau of Indian Affairs school



College/University



Home School → Please skip to Q89.



Informal Educator (e.g., museum, 4-H, etc.) → Please skip to Q89.

88. Do you have any of the following titles? (Check one for each title.)



Yes



No Classroom Teacher



Yes



No Pre-service Educator



Yes



No Math Coordinator



Yes



No Science Coordinator



Yes



No Librarian/Media Specialist



Yes



No Technology Program Coordinator



Yes



No Distance Learning Coordinator



Yes



No Curriculum Coordinator

89. School Location? (Please check only one.)

<input type="checkbox"/>	Rural
<input type="checkbox"/>	Suburban
<input type="checkbox"/>	Urban

90. What is the highest degree you have earned? (Please check only one.)

- ☐ High School Diploma
- ☐ Associates (2-Year) Degree
- ☐ Baccalaureate (BA/BS) Degree
- ☐ Masters/Masters Equivalency
- ☐ Doctorate

91. Your ethnicity? (Please check only one.)

- ☐ African American
- ☐ Asian
- ☐ Caucasian/White
- ☐ Hispanic
- ☐ Native American
- ☐ Pacific Islander
- Other

92. Your age? (Check one.)

- ☐ Under age 20
- ☐ Twenties
- ☐ Thirties
- ☐ Forties
- ☐ Fifties
- ☐ Sixties or older

OMB approval number: (OMB 2700-0012)

Commit	Reset
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Appendix C

The responses below were given as “other” means by which respondents received the program.

The difficulty is knowing the content of the video in order to know which videos to request directly from NASA.
NASA S’COOL
We did not watch the programming - only the activity
I was unable to view any this year due to the blocks put on our district internet. We are hoping that is fixed for next year. I used other instructional programming.
We do not get NASA programming on our local cable.
I was unable to download them from my computer. I requested help by email and never received it.
Satellite. NASA sent us the coordinates
I waited for them to be broadcast by the local JC - our PBS stations don’t carry them - I wish they did.
I could not tape them. I would like to buy them.
Our media specialist tried to download these for me, but was unable to locate the satellite broadcast on either band given. I did not try checking with my local PBS station.
I’m having trouble getting the programs.
I would like to receive them
I did not use the program. I went to the web site to preview it, but I could not get to parts of it because of our web filtering. It considered the program “entertainment.”
A math teacher let me see them.
This was the problem: Could not locate program.
We have direct-TV and couldn’t get the program from the coordinates given.
Saw a preview...haven’t rec’d yet...looking forward to making use of material
I TAPE FROM MY SATELLITE AT HOME.
I received information and was put on email at NABE in January.
Whenever I receive programs for other areas I forward them and that particular teacher uses them. Anything pertaining to Medicine or Health I definitely use myself or share with the Health teacher.
ITFS closed-circuit
hardcopy of lessons
Taped version not available to me
Could not receive or missed the program
I didn’t know how to get tapes, so I just used some lesson plans from the web site.
There are serious quality problems when programs are downloaded via satellite. I am certain that a video or CD would provide better quality and hence be used more. CD images can be enlarged through various technology equipment that we have.
PLEASE SEND TAPES!!!!
NASA sent me the lesson plans.
Was unable to gain access to any of the programs
NASA sent me a mail copy.

*Upon prompting respondents as to why they did **not** use the program, the answers below were received.*

I did not have them here at the school.
I use others and have not had the time to incorporate more.
I was unable to access your programs, either because I didn't understand where to find them or because they weren't available on my PBS station. I am confused. Where do I get your programs?
I cannot find the programs to tape. I was not allowed to use the program for math enrichment this year, but I hope to in the future—change of administration.
I was only sent one tape this year by NASA. In the past I have received all the tapes and TE. I really missed them this year as they are excellent to use with my Gifted 4th and 5th Graders. I would really like to be put back on the mailing list to receive these tapes in the future. I had been in contact with Jessie, but when she left the program, she gave me Sarah Jordan's name, but Sarah didn't respond to my communications. Please see if I can receive the materials from 2002-2003 because all of NASA's materials are far superior to any of my other materials.
Not enough time this year, but I did not receive all listed programs.
There was no time. Will use later.
Found out too late about the program
I pass them onto the classroom teachers.
See no. 24
I have been unable to actually acquire the programs.
I am answering the questions as well as possible. I have not received any information on the programs nor the programs themselves. I would love to review the material and possibly incorporate the programs into both my math and Earth Science class.
haven't done that one yet
lack of time to incorporate thoroughly, but will use more since I am more familiar with the material.
I did not have time in the curriculum. My district does not encourage integrated lessons.
Tailored STARBASE curriculum.
I was not able to tape all of the programs. Also, I teach 5 different courses, which makes planning a challenge (time).
I am not sure how to take advantage of what NASA CONNECT has to offer.
Could not receive program...given too little notice
I teach Gifted and Talented students. Our topics rotate every four years. Next year is space.
will not have time to incorporate it into my lessons
I do not have any NASA Connect software.
sometimes, the program and district or state guidelines don't match
didn't get some of them and others didn't come in time for the lesson
No time to integrate them into curriculum. Also a bit advanced for fifth grade.
Time Constraints
We do not have easy access to a satellite feed. I was not able to tape any of the programs.
I didn't have any way to receive the video. I now know that NASA will send me the videos. Would you please send me information on how to receive them?
I would like to receive them
I did not use the program this year.

A math teacher let me look at them
Would like a schedule in advance to tape programs.
I used them all
Didn't use program
Didn't have them
next year
same as above
Some were not received in the post...

*Upon prompting respondents as to why they did **not** use the program, the answers below were received.*

no opportunity
does not fit curriculum
time constraints
I'm not good in math myself.
I was a resource teacher and not a classroom teacher.
I did not teach math or science this school year.
unavailable
Did not need them for what we used. Will use them in the future.
I was involved with so many other projects that I was not able to attend to this.
Right now I am full-time doctoral student.
I just schedule the programs over ITFS closed-circuit for teachers/librarians to use. This evaluation has been forwarded on to the schools.
Not enough time to cover these areas.
These topics were not requested by our teachers this past school year
Brand new school—slowly getting things implemented.
These guides are not on topics that fit the curriculum for my state/grade level.
We were unable to tape the programs due to time constraints. I very much want to use the programs and hope to purchase them if necessary.
I was unable to catch the programs on TV as I could not locate the channel that broadcasted the programs and the broadcast times.
Problems with satellite.
New curriculum this year, no time. I need to match the programs with appropriate units within our new lessons.
We are unable to obtain the NASA series from the NASA channel. Our technology experts are unaware of this series and its availability. I have referred emails concerning this series and its availability to no avail.
The material mailed to me looks excellent, but I did not take the time to get the video portion and put it all together for my classes. I will try harder this year.
I team teach in a special education classroom. Due to organizational changes it was not possible to use the programs.
did not teach this year

This is the first year that I have taught astronomy to fifth grade. We adopted a literacy program this year that made it difficult to integrate science and math during the adoption period. I am a SDAIE teacher. I plan to review the entire selection this summer and, provided I return to my classroom (pink-slip pending), I will use any appropriate activities from NASA in an expanded math, science, technology format. We are also applying for the Astronomer in the Schools program, which was suggested by NASA. Finally, our school district does not have reliable facilities for regularly viewing NASA video via KQED. I checked with our Vice Principal about this. He said something about getting rabbit ears for the monitor, which I use occasionally as a VCR. I haven't had a chance to try that method out.
I did not use any of the programs this year because the PBS feed is shown in the middle of the night. It is mixed with other programs and when I record it, I get other programs that I don't want. It would be much better if I were able to send for the videos.
I received--didn't check my email and didn't have time to figure out where or when to see the programs or work them into my schedule. I would rather have the information on hand and use it to supplement the unit when I teach it.
We can get the guides, either by mail or downloaded. 6th Grade science used one or more during the year for activities related to curriculum.
I downlink these programs for the Duval County School System.

*Upon prompting respondents as to why they did **not** use the program, the answers below were received.*

I am part of a reform math program that required all of my class time. I incorporated some activities that supported the standards-based text I was implementing.
My students were unable to effectively complete the projects due to the advanced nature of the program. I plan to use the program with next years group.
no need
Much of the math was above level for my 5th graders, so I didn't print out the guide. I did look at several on the web, though and will probably print out several this summer for use next year.
I didn't have time to use everything.
I was acting as a contact person for my district due to the fact that I had email access to the over 500 science teachers. I personally did not use the program as I am not in the classroom this year. I have an interest to use them with one or several of the graduate and undergraduate courses that I teach, as well as, in the numerous Professional Development activities I am involved with. What I have seen I LOVE!!!! I think it would be great with kids, but I have not used it with kids YET!
I couldn't get the programs so I didn't access the Teacher's Guides
I could not access the programs via satellite
It doesn't fit my curriculum
Not enough time
I learned about the program too late
I was unable to access the NASA CONNECT videos and was unaware that print guides existed.
The mixture in my students in my classroom prevented it.
I very much wanted to use the programs but could not gain access to them
I don't have the programs yet and I lack computers that will sustain the learning.

When asked to give any additional comments regarding the educator guides, respondents provided the comments below.

The educator guides were not accessible. I gave up.
We use them to determine where they fit into the Florida Sunshine State Standards.
Answers for some problems in the TE would be great. Because of the time delay I have experienced in getting a tape of the show, I have proceeded with the module before viewing the video. If you thought about using a DVD, maybe it could include them as well. This would open up the program to more students.
These are a good idea but are very hard to manage. As a special education teacher, I would like to see them laid out differently maybe use a mixed group of teachers that do and do not teach science/math would be helpful.
They would be great on CD-Rom.
Lack of time.
I teach Gifted and Talented students. Our topics rotate every four years. Next year is space.
Evaluation is long and repetitive.
We don't have a DVD.
Must conform to 8.5 × 11 format.
The kids loved the activities.
I have difficulty getting the tapes; however, I do use the printed material and find it very well done.
Should be created for lower level of learning.
Received "Dancing in the Night Sky" too late to use this year. Didn't realize videos were available.
We have trouble downloading large files from the Internet (Internet cuts off too quickly to completely download). Hard copy works better for us
Having print guides provided is a great resource for me. It is not always easy to download guides from the Internet: sometimes there are problems in bringing up the guides and certain parts of them do not clearly reproduce.
Print version of the guides is advantageous as the teachers can make copies for students without any hassles.
I am missing parts and that limits my ability to use the program.
Our school does not have DVD players.
We do not currently have a DVD player. We use CD-Rom regularly during literacy. We have three reliable stations and a computer lab that could conceivably be turned into a whole class activity. Otherwise, I'm afraid that I would have to use it only during a workshop period.
I feel they are good approaches to standards-based mathematics.
Our district currently does not allow use of any CD-ROMs unless they are centrally loaded and available to all schools. I can use any that contain information only, but if they have to be launched by a program, they are unavailable to me. We hope that will change, but at the moment, those are the district policies.
Print is easier for me to use.
I have been a big fan of NASA from its inception and it was fun to have newer facts at hand to discuss the more technical ideas with students.
Thank you for this service.
It's better if the guide is presented in color.

When asked to give any additional comments regarding the classroom activities, respondents provided the comments below.

I teach Gifted and Talented students. Our topics rotate every four years. Next year is space.
Need a schedule of future broadcasts so that we may plan on viewing programs.
sometimes difficulty downloading
In past years your lessons have been age appropriate and have met Kentucky Educational Reform Act criteria, and were well received by students. Background information was strong and helpful for introducing the material and activities
The activities were usually appropriate and reasonable for my students, but I did not always have time to incorporate them into our course work. As much as science teachers want & need to use hands-on activities with students, we are constantly fighting the time element.
In general, I've found NASA-related activities easy to use and always fun for kids.
I had specific questions concerning my classroom computer access. I answered for the room that I was in the 2000–2001 school year, which was fairly indicative for the school I was in as a whole. (Sorry if this provides you with invalid data.
Most of my students are English as a second language learners so I could use a few more lessons written from a slightly lower reading level.
Time was the factor for my not using the activities. I will be incorporating them in the future.
More information was needed to prepare me for their use. I fumbled a lot.

When asked why users did not use the programs in question, respondents provided the comments below.

Not available
no time
I didn't receive the programs.
see above
It is tough to use a computer in my classroom because of time and access for students.
Again, I had no access to the 2002–2003 materials.
not teaching staff
not enough time
Doesn't apply to the District ITV
My VA service-connected disability Rehabilitation program did not grant me the TV I requested, to my great disappointment, and I have no TV. Hope to find other means to get a TV.
Difficulty getting access to computers
As I am the Media Specialist for an Educational Television Channel, I feel the rest of the survey does not pertain to me. The shows are wonderful and our audience asks for them to be broadcast.
too few computers and availability of time on them
Delivery of tapes delayed due to mix up with media services, most of them coming in one batch - used only #2 as it fit exactly what we were doing at the time and didn't have time to plan for all the activities associated with it.
Time

STARBASE
Hard to schedule time in computer lab
did not use on-line connect
Not enough time in a day. Too little computer access
I have not looked into these web-based activities yet.
Lack of time.
Not sure how to take advantage of NASA CONNECT.
You have different activities on-line? I did not know that. I will be sure to check them out!

When asked why users did not use the programs in question, respondents provided the comments below.

I teach Gifted and Talented students. Our topics rotate every four years. Next year is space.
No time
inability to book lab time when needed
I do not have any NASA CONNECT software.
Time constraints
Same as before.
Same as number 44.
I plan to use some of the other activities in May as we're wrapping up the end of the year.
no time
I did not use the program
I only got to see the program briefly, but it looked interesting and hopefully I will get to use it next year.
Didn't use.
Did not use those topics
next year
I did not realize they were available on-line.
same as above
No time
If the guides don't arrive, I will be considering using the site to keep up to date...
sometimes hard to download and no time
lack of computer access
See question 55.
I teach English and Reading.
not enough access to computers
Same as #53
Will use in the future.
I was involved with so many activities that I wasn't able to attend to this matter.
Lack of computer time for students
Right now I am full-time doctoral student.
Programs are only sent via ITFS.

No computers for students
Brand new school—slowly getting things implemented.
Time in the school computer lab is limited and often not available when I would like to be able to use it with students.
see previous comment
Unable to obtain NASA CONNECT series
not enough access
Same as above
see 44 and 55
did not teach this year
See above
I would like to receive some copies of the programs. It is possible to get Spanish versions in the future.
I am instructional technology coordinator. Some materials were used by classroom teachers but I have received no feedback.
We have no access to the Web.
Computer availability is very, very limited for an entire classroom activity.
Some things were too advanced for the spec.ed population I teach.
There is limited access to a bank of computers
Time constraints in the computer lab.

When asked why users did not use the programs in question, respondents provided the comments below.

I just began the universe unit this year. I plan to incorporate the activities and lessons into the unit for next year.
I need information during the summer to plan my activities for the next year. (In May)
Same answer as #55
I didn't have enough time to use everything.
I used only the activity that I received.
I cannot address, sorry.
Again, no access to the programs, but I didn't think of accessing the Web to see if I could have used the web pages instead.
ditto
I never had the time to look at the web site.
not enough time
Not had time yet to try them
We didn't have enough time to look up the web-based activities.
I learned about the program too late.
I was unable to access the videos.
Our computer cart was signed out for the allotted time period. No computers.
See # 44
I don't have internet access in our home
I hope to use it next time now that I have more experience.

When asked to give any additional comments regarding the web-based activities, respondents provided the comments below.

I use the NASA web site very often and plan lessons around it. I took my students to KSC this spring and we did much advanced planning using the web site.
Excellent. Works well for the students. Students like the challenge.
I thought you needed a dish to receive the program. It is difficult to make arrangements to get the program.
I teach Gifted and Talented students. Our topics rotate every four years. Next year is space.
I have not visited the NASA CONNECT web site.
evaluation too long
same as above
I want to use it more
Unable to access the computer labs at the needed date or the server was down.
As I said before, I plan to explore the use of the website for the coming year.
This is a wonderful program but it is hard to get the tapes.
I like the format of self-pacing because it is not judgmental and offers positive feedback no matter how long a student may need to work on a particular activity.
Provided easier down loads.

Below are the “other” professional duties reported by respondents.

Enrichment Specialist
school TV channel director
ITV Resource Teacher
Freelance Aerospace Educator
special education teacher
editor
Tech Integrator
Director
Lead Teacher K-5 too
Special Ed. Gifted
Trainer
Science resource teacher
Resource to teachers
writer
Right now I am full-time doctoral student.
Technology Resource Teacher
Registered Nurse Teacher
ITFS Technical Director
Assistant Education Specialist, Mammoth Cave National Park
science department chairperson

Extension Educator
Gifted teacher
School-Based Technology Facilitator
Broadcast and Satellite Services Specialist
Math Dept Chairperson
I teach a math and science class for 12–15 year olds featuring NASA information and speakers who work at NASA. I teach at an educational Co-op and at a library.
student

When asked to provide their ethnicity, respondents gave the following responses to the prompt of “other.”

Polish
WASP
Chicano
Middle East

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14. ABSTRACT NASA CONNECT™ is an Emmy®-award-winning series of instructional (distance learning) programs for grades 6–8. Produced by the NASA Center for Distance Learning, the nine programs in the 2003–2004 NASA CONNECT™ series are research-, inquiry-, standards-, teacher-, and technology-based and include a 30-minute program, an educator guide containing a hands-on activity, and a web-based component. The 1,500 randomly selected NASA CONNECT™ registered users were invited to complete an electronic (self-reported) survey that employed a 5-point Likert-type scale. Regarding NASA CONNECT™, respondents reported that the programs (1) enhance the teaching of mathematics, science, and technology (4.53); (2) are aligned with the national mathematics, science, and technology standards (4.52); (3) raise student awareness of careers requiring mathematics, science, and technology (4.48); (4) demonstrate the application of mathematics, science, and technology (4.47); and (5) present women and minorities performing challenging engineering and science tasks (4.50).						
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